Directorate General of Water Resources
Ministry of Public Works
The Republic of Indonesia

THE STUDY
ON
COUNTERMEASURES FOR SEDIMENTATION
IN
THE WONOGIRI MULTIPURPOSE DAM RESERVOIR
IN
THE REPUBLIC OF INDONESIA

FINAL REPORT

VOLUME-V SUPPORTING REPORT III

JULY 2007

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FINAL REPORT

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EXCHANGE RATE

The exchange rate used in this Study is:	
Master Plan Study	US Dollar (US$) 1.00 = Indonesia Rupiah (Rp.) 10,035 = Japanese Yen (Y) 119.63 as of December 2005
Feasibility Study	US Dollar (US$) 1.00 = Indonesia Rupiah (Rp.) 9,050 = Japanese Yen (Y) 118.92 as of December 2006


KEY MAP
PROJECT AREA
KALIMANTAN
SUMATRA
Jakarta
JAWA SEA
INDIAN OCEAN
JAWA
SCALE
0 5 10 15 20 25 30 km
N
Bengawan Solo
Sragen
Ngawi
Mt. Buntung
742
Mt. Pandan
897
Cemara River
Mt. Merbabu
3142
Mt. Merapi
2914
Boyolali
SURAKARTA
Brambang River
Gawe River
Grompol River
Mungkung River
Sragen River
Sawur River
Ketonggo River
Jerowat River
500
1000
1500
2000
Mt. Lawu
3265
2298
MADIUN
Gondang River
Madiun River
Catur River
Samin River
Jlantah River
Klaten
Dengkeng River
Colo Weir
Walikan River
Gonggang River
Asin River
Mt. Wilis
2563
Wonogiri
Slogohimo
Ngadirojo
Jatisrono
Wonogiri Multipurpose Dam
Wuryantoro
Keduang River
Tempuran River
Mungkungan River
Ponorogo
Eromoko
Tirtomoyo River
Batuwarno
Temon River
Keyang River
Anyar River
Bengawan Solo
Baturetno
Alang River
Pracimantoro
Giriwoyo
Pacitan
Indian Ocean
Legend
Watershed
River
Wonogiri Dam
Railway
Road
Mountain
City
Town
Provincial Boundary
Location Map
BENGAWAN SOLO
SCALE
0 15 30 45 60 75 90 km
KEY MAP BENGAWAN SOLO

Abbreviation (1/3)

Abbreviation	Indonesian	English
ADB	Bank Pembangunan Asia	Asian Development Bank
AMDAL	Analisis Mengenai Dampak Lingkungan	Environmental Impact Analysis
APBD	Anggaran Pendapatan dan Belanja Daerah	Provincial Government Development Budget (Provincial Budget)
APBN	Anggaran Pendapatan dan Belanja Negara	Central Government Development Budget (National Budget)
BAKOSURTANAL	Badan Koordinasi Survey dan Pemetaan Nasional	National Coordination Agency for Surveys and Mapping
Balai PSDA	Balai Pengelolaan Sumber Daya Air	Regional Office of Water Resources Management
Balai PDAS	Balai Pengelolaan Daerah Aliran Sungai	Regional Office of Watershed Management
BAPEDAL	Badan Pengendalian Dampak Lingkungan	Environmental Impact Management Agency
BAPEDALDA	Badan Pengendalian Dampak Lingkungan Daerah Propinsi	Provincial Office of Environmental Impact Management Agency
BAPEEDA	Badan Perencanaan Pembangunan DaerahTingkat I	Regional Development Planning Agency of Province
BAPPENAS	Badan Perencanaan Pembangunan Nasional	National Development Planning Agency
BB	BB	Brachiaria Brizantha
BBI	Balai Benih Induk	Seed Production enter
BBLH	Biro Bina Lingkungan Hidup	Bureau of Environmental Guidance
B-C	-	Net Present Value
BD	-	Brachiaria Decumbens
BIMAS	Bimbingan Masal	Mass Guideline for Agricultural Divelopment
BKPH	Bagian Kesatuan Pemangkuan Hutan	Forest Administration Sub-unit
BMG	Badan Meteorologi dan Geofisika	Meteorological and Geophysical Agency
BOD	-	Biochemical Oxygen Demand
BP2TPDAS	Balai Penelitian dan Pengembangan Teknologi Pengolohan Daerah Aliran Sungai	Watershed Management Technology Centera, Ministry of Forestry
BPDAS Solo	Balai Pengeloloan Daerah Aliran Sungai Solo	Solo River Management Office of Ministry of Forestry
BPKH	Balai Pemantapan Kawasan Hutan	Forest Area Consolidation Bureau
BPPHH	Balai Pengendalian Peredaran Hasil Hutan	Forestation Result of Agricultural Extension Office
BPS	Biro Pusat Statistik	Central Bureau of Statistics
BPTP Terpadu	Balai Pengkajian Teknologi Pertanion	Integrated Agricultural Technology Assessment Center
BPTPH	Balai Proteksi Tanaman Pangan dan Hortikultura	Provincial Plant Protection Center
Cd		Cadmium
CDMP	-	Comprehensive Developmant and Management Plan Study for Bengawan Solo River Basin under Lower Solo River Improvement Project
COD	Kebutuhan Oksigen untuk proses kimia	Chemical Oxygen Demand
Cr	Khrom	Chromium
Cu	-	Copper
CWL	Tinggi Muka Air Kendali	Control Water Level
DAS	Daerah Aliran Sungai	Watershed, Catchment
DEM	-	Digital Elevation Method
DEPDAGRI	Departemen Dalam Negeri	Ministry of Home Affairs
DEPHUT	Departemen Kehutanan	Ministry of Forestry
DEPKES	Departemen Kesehatan	Ministry of Health
DEPTAN	Departemen Pertanian	Ministry of Agriculture
DFWL	Tingi Muka Air Banjir Rencana	Design Flood Water Level
DG	Direktorat Jendral	Directorate General
DGLWM	Direktorat Jendral Pengelolaan Lahan dan Air	Directorate General for Land and Water Management
DGWR	Direktorat Jenderal Sumber Daya Air	Directorate General of Water Resources
DHF	_	Dengue Hemorrhagic Fever
Dinas LHKP	Dinas Lingkungan Hidup, Kehutanan dan Pertambangan	Environment, Forestry and Mining Services of kabupaten Wonogiri
DIP	Daftar Isian Proyek	Approved Project Budget
DIPERTA	Dinas Pertanian Tanaman Pangan Daerah Propinsi Jawa	Provincial Agricultural Service of Central Java
DO	Oksigen Terlarut	Dissolved Oxygen
DPRD	Dewan Perwakilan Rakyat Daerah	Regional House of Representatives
DPU	Departemen Pekerjaan Umum	Ministry of Public Works
EFWL	Tinggi Muka Air Banjir Ekstra	Extra Flood Water Level
EIA	Analisis Dampak Lingkungan	Environmental Impact Assessment
EIRR	-	Economic Internal Rate of Return
EU	Uni Eropa	European Union
FAO	Badan Pangan Dunia	United Nations Development Programme /Food and Agriculture Organization
FORDA	Litbang Departemen Kehutanan	Forestry Research & Development Agency
GDP	-	Gross Domestic Product
GIS	Sistem Informasi Geografis	Geological Information System
GMU	Universitas Gadjah Mada	Gadjah Mada University

Abbreviation (2/3)

Abbreviation	Indonesian	English
GNKPA	Gerakan Nasional Kemitraan Penyelamatan Air	National Movement of the Partnership for Water Preservation
GNP	Pendapatan Nasional	Gross National Product
GOI	Pemerintah Indonesia	Government of Indonesia
GOJ	Pemerintah Jepang	Government of Japan
GPS	Sistem Posisi Global	Global Position System
GRDP	Produk Domestik Regional Bruto	Gross Regional Domestic Product
GERHAN	Gerakan Nasional Rehabilitasi Hutan dan Lahan	National Movement for Forest & Land Rehabilitation
H-A	-	Relation between reservoir water level and reservoir surface area
H-V	-	Relation between reservoir water level and reservoir capacity volume
HKTI	Himpunan Kerukunan Tani Indonesia	Farmer's Association
HPI	Indek Kemiskinan	Human Poverty Index
IBRD (WB)	Bank Dunia	International Bank of Reconstruction and Development (Work Bank)
IEE	Pengkajian Pendahuluan Lingkungan	Initial Environmental Examination
IPAIR	Iuran Pelayanan Irigasi	Irrigation Service Fee
IPEDA	Iuran Pen Bangunan Daerah	Village Land Tax, Provincial Development Tax
ISPA	Infeksi Saluran Pernafasan Atas	Upper Respiratory Nasopharynx
JAMALI	Sistem Interkoneksi Jawa-Madura-Bali	Java-Madura-Bali power generation system
JBIC	-	Japan Bank of International Cooperation
JICA	-	Japan International Cooperation Agency
JIS	Standar Industri Jepang	Japanese Industrial Standards
JPY, Yen	Yen	Japanese Yen
K2TA	Kelompok Konservasi Tanah dan Air	Soil and Water Conservation Farmer Group
KBD	Kebun Bibit Desa	Seeding Garden Village
KCI	-	Polassium Chloride
KESBANLINMAS	Badan Kesatuan Bangsa dan Perlingdungan Masyarakat	National Unity and Society Protection Board
KIMPRASWIL	Departemen Pemukiman dan Prasarana Wilayah	Ministry of Housing and Regional Infrastructure
KPH	Kesatuan Pemangkuan Hutan	Forest Administration Unit
KT	Kelompok Tani	Farmers' Group at Village Level
KUD	Koperasi Unit Desa	Village Cooperative Unit
LHKP Wonogiri	Lingkungan Hidup, Kehutanan dan Pertambangan	Forestry Sub-services of Wonogiri Human Environment, Forestry and Mining Services Office
LKMD	Lembaga Ketahanan Masyarakat Desa	Village Social Activities Group, Village Welfare Institution
LPTP	NGO (Lembaga Pengembangan Teknologi Perdesaan)	-
LSM	Lembaga Swadaya Masarahkat	Nongovernmental Organization (NGO)
LWL	Tinggi Muka Air Rendah	Low Water Level
M&E	Pemantauan dan Evaluasi	Monitoring and Evaluation
MOU	Nota Kesepahaman	Memorandum of Understanding
MT I	Musim Tanam I	Cropping Season I
MT II	Musim Tanam II	Cropping Season II
MT III	Musim Tanam III	Cropping Season III
NGO	Lembaga Swadaya Masyarakat	Non Governmental Organization
NHWL	Tinggi Muka Air Normal	Normal High Water Level
NO2	Nitrit	Nitrogen Dioxide
NO3	Nitrat	Nitrogen Trioxide
NTU	-	Nephelometric Turbidity Unit
O&M, O/M	Operasi dan Pemeliharaan	Operation and Maintenance
Otonomi daerah	Otonomi Daerah	-
OECF	-	Overseas Economic Cooperation Fund
OTCA	Lembaga Kerjasama Teknis Luar Negei	Overseas Technical Cooperation Agency
P4K	Pembinaan Peningkatan Pendapatan Petani-Nelayan Kecil	Farmer Groups of Small-Scale Farmers
Pb	-	Lead
PBS	Proyek Bengawan Solo	Bengawan Solo River Basin Development Project
P2AT	Proyek Pengembangan Air Tanah	Groundwater Development Project
P3A, HIPPA	Perkumpulan Petani Pemakai Air, Himpunan Petani	Water User's Association (WUA)
PABBS	Proyek Penyediaan Air Baku Bengawan Solo	Bengawan Solo River Water Supply Project
PBS	Proyek Bengawan Solo	Bengawan Solo River Basin Development Office
PCM	Pertemuan Konsultasi Masyarakat	Public Consaltaiton Meeting
PDAM	Perusahaan Daerah Air Minum	Regional Drinking Water Supply Company
PDAS	Pengelolaan Daerah Aliran sungai	Watershed Management
PDRB	Produk Domestik Regional Bruto	Product Domestic Regional Brutto
Perum	Perusahaan Umum	Public Corporation

Abbreviation (3/3)

Abbreviation	Indonesian	English
PERSEPSI	NGO (Perhimpunan untuk Studi dan Pengembangan Ekonomi dan Sosial)	-
pH	Nilai Keasaman	pH value
PHBM	Pengololaan Hutan Bersama Masyarakat	Community Participated Forest Management
PJP	Pembangunan Jangka Panjang	Twenty-Five Year Long Term Development Plan
PIPWS Bengawan	Proyek Induk Pengembangan Wilayah Sungai Bengawan	Bengawan Solo River Basin Development Office
PJT	Perum Jasa Tirta	Public Water Service Corporation
PKL	Penyuluh Kuhutanan Lapangan	Field Forestry Extension Worker
PKSDABS	Proyek Pengembangan Konservasi Sumber Daya Air Bengawan Solo	Bengawan Solo River Water Resources Conservation Development Project
PLTA Wonogiri	Pusat Listrik Tenaga Air Wonogiri	Wonogiri Power Station
PMF	Banjir Maksimum yang mungkin terjadi	Probable Maximum Flood
PO4	-	Phosphoric Tetroxide
PPL	Penyuluh Pertanian Lapangan	Field Extension Workers
ppm	Seper juta	parts per million
PPTPA	Penitia Pelaksana Tata Pengaturan Air	River Basin Water Resources Management Committee
PRA	Analisa Partisipatori Pedesaan	Participatory Rural Appraisal
PROPENAS	Program Pembangunan National	Five-Year National Development Program
PSAPBBS	Proyek Pengelolaan Sumber Air dan Pengendalian Banjir Bengawan Solo	Bengawan Solo River Water Resources Management and Flood Control Project
PSDA	Pekerjaan Umum Sumber Daya Air	Water Resource Management
PT CMA	PT Citra Mandala Agritrans	-
PTPA	Panitia Tata Pengaturan Air	-
PU	Pekerjaan Umum	Ministry of Public Works
REI	-	Rain Erosivity Index
RENSTRA	Rencana Strategis	Strategic Plan
REPEDA	Rancangan Peraturan Daerah	Annual Plan
Rp.	Rupiah	Indonesian Rupiah
RPH	Resort Pemangkuan Hutan	Field Unit of KPH
RTL	Rencana Tindak Lanjut	Field Technical Planning in Upper Solo Watershed Protection Project in Wonogiri Watershed
RTT	Rencana Teknis Tahunan	Yearly Technical Planning in Upper Solo Watershed Protection Project in Wonogiri Watershed
RUTRK-RDTRK	Rencana Umum/Detail tata Ruang Kota	General City Site Plan, Detailed City Site Plan
RWL	Muka Air Waduk	Reservoir Water Level
SBRLKT	Sub Balai Rehabilitasi Lahan dan Konservasi Tanah	Sub Unit for Land Rehabilitation and Soil Conservation
SCF	Faktor Konversi Standar	Standard Conversion Factor
SDR	Nisbah Pengantaran Sedimen	Sediment Delivery Ratio
SEA	Penilaian Lingkungan Strategis	Strategic Environmental Assessment
SFC	Perum Perhutani	State Forest Corporation
SHFD	Debit banjir tertinggi standar	Standard Highest Flood Discharge
SI	-	Stress Index
SS	Padatan Tersuspensi	Suspended Solid
SWOT	Kekuatan, Kelemahan, Kesempatan, Ancaman	Strength, Weakness, Opportunity, Threat
TDS	Total Padatan Terlarut	Total Dissolved Solid
TIU	Unit Pelaksana Teknis	Technical Implementation Unit
TOR	Kerangka Acuan Kerja	Terms of Reference
TSS	Total Padatan Tersuspensi	Total Suspended Solid
UKL	Upaya Kelola Lingkungan	Environmental Management Efforts
UNDP/FAO	Badan Pangan Dunia	United Nations Development Programme /Food and Agriculture Organization
UPL	Upaya Pemantau Lingkungan	Environmental Monitoring Efforts
UPR	Unit Pembenihan Rakyat	Community Nursery Unit
UPTD	Unit Pelaksana Teknis Daerah	Local Technical Implementation Unit
US$, USD	Dollar Amerika	US dollar
USAID	-	US Agency for International Development
USLE	Persamaan Kehilangan Tanah Umum	Universal Soil Loss Equation
VAP	Rencana Kerja Desa	Village Action Plan
WC3	Komite Koordinasi Konservasi DAS	Watershed Conservation Coordinating Committee
WKPP	Wilayah Kerja Penyuluhan Pertanian	Working Area of Agricultural Extension
WM	Pengelolaan Daerah Aliran sungai (DAS)	Watershed Management
WRM	Pengelolaan Sumber Daya Air (SDA)	Water Resource Management
Zn	Seng	Zinc

Annex No.10
Social Survey

THE STUDY ON
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FINAL REPORT

SUPPORTING REPORT III

Annex No. 10: Social Survey

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Attachment

Attachment Village Action Plan

CHAPTER 1 GENERAL SOCIAL ASPECTS IN THE STUDY AREA

1.1 Cultural and Religious Characteristics

In the watershed area, three major cultural groups are identified, namely: "Kutuk Kalung Kendo", "Ketek Seranggon", and "Lemah Bang Gineblegan". Their distributions and characteristics are summarized as follows.

Table 1.1.1 Major Cultural Groups in the Watershed

Cultural Group	Distribution	Characteristics
Kutuk Kalung Kendo	Flat area of the Watershed and hilly area of Gunung Seribu	Major occupations are farmer or trader. Participation to the development activity is positive, but it is said that qualified leader is required.
Ketek Seranggon	Along the Wiroko river and valley of the southeast Wonogiri town	Participation to the development activity is not so positive, and, they sometimes carry out opposite activities, if proper action was not taken by the Government.
Lemah Bang Gineblegan	High potential area of Watershed, bounded by the Kresek river in the east, by Lawn mountain in north, by the Keduang river in the south, and by the solo river in the west.	Participation to the development activity is not so easy, since their have original opinions. It is, therefore, said qualified leader with strong leadership will be required.

Source: Socio-Economic Report of Upper Solo Watershed Protection Project, 1990

According to Statistical Year Book of Regency Wonogiri in 2004, major religion in the watershed is Islam (96.9%) followed by protestant (1.5%) and catholic (1.2%).

1.2 Community Organizations

Through the field observation made in December 2004, following organizations are identified at village level. Normally, those organizations are formulated at the rate of one per one village. However, activeness of these organizations depends on the leadership of organization leaders (see Table 4.1.2).

1.3 Income Generation Activities

In addition to the crop cultivation and livestock activities, various income generation activities in the rural area in the watershed are identified, namely: i) agro-processing for producing local cake, chips or other process food from cash nuts, soybean, cassava, banana, chicken meet and beef meet, ii) handicraft such as doll, and carving, iii) traditional medicine (called "Jamu" in Indonesia), iv) gravel digging, and v) trading.

Table 1.1.2 Organizations Identified in the Village

Indonesian Name	English Name	Function
BPD: Badan Perwakilan Desa	Village Representative Board	Role of village assembly consisting of elected people
LPM: Lembaga Pemberdayaan Masyarakat	Society Empowerment Organization	Advice on village problem and development to head of village consisting of informal leaders
LPKK: Lembaga Pemberdayaan Kesejahteraan Keluarga	Family Welfare and Empowerment Organization	Implementation of family welfare activities for the village consisting of village women
Karang Taruna	Youth group	Implementation of activities for youth consisting of young people
Pengajian	Religious group	Implementation of religious activities

Source: Interview survey results made by JICA Study Team in December 2004

The factors mostly hindering the income generation activities related to agro-processing in the Wonogiri catchment area are water resources (irrigation for crops and drinking for cattle). For some villages, the access roads is still important obstacle (otherwise, most of the villages are considered to be well connected). Also, the interview results indicate the lack of off-farm employment opportunities for the increasing number of population is an important barrier for income generation activities.

After the completion of Wonogiri multipurpose dam project, the inland fishery around dam reservoir is popular. Thera are available for 7 sub-districts around the reservoir, namely Wonogiri, Ngadirojo, Nguntoronadi, Baruretno, Giriwoyo, Eromoko, and Wuryantoro. By the end of 2003, there were about 18 fishermen groups formed, including 584 members (17 groups with 564 members in 2002). In 2003, the fish production in the reservoir was about 946.3 ton (937.2 ton in 2002), according to the report of Livestock, Fishery and Marine, 2003. As tourism development around reservoir, 18 hotels and 13 restaurants have been newly constructed.

1.4 Poverty

The survey on "poor and very poor families" was carried out in 2002 in Regency Wonogiri. According to the survey, the family whose annual income per head per month is less than 75,000 is categorized as "very poor family" and the family whose annual income per head per month is 75,000 – 89,999 is categorized as "poor family". The survey results are summarized in Table 1.4.1.

Table 1.4.1 Poor Family Ration in Regency Wonogiri

(Unit: ha)

	Total Household	Very Poor Families (<Rp. 75,000)	Poor Families (Rp. 75,000 – 89,999)	Total Poor Families
Wonogiri Catchment Area	252,206 (100%)	58,714 (23%)	60,312 (24%)	119,026 (47%)
Kab. Wonogiri	295,898 (100%)	72,774 (25%)	71,790 (24%)	144,564 (49%)

Source: Hasil Pendataan Keliarga Miskin Dan Miskin Sekali, 2002

Economic crisis of 1998 increased the number of poor in Indonesia. The number of very poor family in 1996 was 24% in Regency Wonogiri (22% of total Central Java population). In 2002, very poor family reached 72.7 thousand families (25%), with the poverty line of Rp.75,000.

1.5 Safety Net at Village Level

For the very poor families as mentioned above, the following public safety nets are established at village level.

Table 1.5.1 Public Safety Nets Implemented in the Village

Indonesian Name	English Name	Content
OPK-Raskin Operasi Pasar Khusus-Beras untuk orang Miskin	Special assistance for poor family	The assistance has been made since 1997. For the families categorizes as "very poor", 2 ton per family of paddy is provided at monthly basis.
JPS – Kesehatan Jaring Pengaman Sosial-Kesehatan	Social safety net for health	The assistance has been made since 1998. For the families categorizes as "very poor", yellow cards are issued by village authority, and they can receive medical service at free of charge.
Program Obat Murah untuk Desa	Medicine for village program	For the families categorizes as "very poor", village provides credit for purchasing medicines.

Source: Interview survey results made by JICA Study Team in December 2004

1.6 NGO Activities

In total, 117 local NGOs are registered KESBANGLINMAS (Badan Kesatuan Bangsa dan Perlindungan Masyarakat/ Nation Unity and Society Protection Board) in Regency Wonogiri. According to KESBANGLINMAS in Wonogiri, most of local NGOs registered are not active, since their finical capabilities are quite week. Less than 10 NGOs are active and strong to enough capacity for implementation of the project in Regency Wonogiri. In 2004, KESBANGLINMAS provides subsidy amounted to Rp. 750,000 per one registered NGO.

There is one local NGO PERSEPSI as qualified NGO recommended by BAPPEDA Wonogiri. NGO PERSEPSI is facilitating a pilot project for social forestry. Pilot project for social forest is currently going on in Sub-District Batuarno/ Village Sumberrejo. There are 9 farmers groups established (about 42 farmers each, operating about 120ha forest each). According to NGO PERSEPSI, it is estimated that social forest program will generate income of Rp.3million/member/year.

1.7 Farmers' Attitude towards Soil Conservation

Preliminary results of interview surveys to local people indicate that the watershed conservation project co-financed by the World Bank improved farmers' awareness of soil erosion and soil conservation. However, the limiting factor for the implementation and maintenance of soil conservation works by the farmers is their low income, and, as the result, weak sustainability of the farms, forcing many farmers to seek off-farm income.[1]

[1] Based on the "Completion report of the Upper Solo Watershed Conservation Project, 1992"

CHAPTER 2 KEY CONSIDERATION IN THE WORKSHOPS

2.1 Key Consideration Identified in the Workshop I for the Watershed Management

In the workshops No.1 held on December 28 2004, the following issues and key points for the conservation and development in the watershed area were expressed.

Table 2.1.1 Major Points for Watershed Management Expressed in the Workshop I

Category	Content
Role of people	Management of Wonogiri dam reservoir should involve the society broadly, consider the land use accurately, and incorporate related aspects appropriately.
Issues and needs on watershed	There are a lot of land sliding and lack of water in the Wonogiri watershed. Therefore, conservation of watershed needs to be socialized to all stakeholders.
	A number of sediment countermeasures have been conducted; however, sedimentation is still going on. The crucial problem would be of people poverty; therefore the JICA study should cover either community or economic development programs.
	Farmers in the catchment area of Wonogiri dam have never taken water from the Wonogiri reservoir so that they hope deeply to get the water from Krisak dam, supplying the water from the Wonogiri reservoir. In addition, they have never had irrigation water for the cropping in dry season.
Development approach	Conservation of cultivation land can not be carried out independently. It needs some considerations such as required infrastructures, farm development, farmers' necessity and financial supports (prosperity approach) to figure out that the land conservation would not only belong to the government but also to be the need of the people.
	After completing the JICA study, activities required for sustainable conservation need to be set up.
Benefit share between watershed and downstream,	While people/farmers around the Wonogiri reservoir use the water, people in the upper Wonogiri dam have already got benefits from electricity and fishery.
	Contribution from downstream to upstream area of Wonogiri Dam needs to be realized.

Source: Minutes of meeting for workshop I on Dec. 28 2004.

The above table shows the outline of peoples' concern in watershed area. Those include: i) importance of peoples' involvement of conservation and development, ii) need of soil conservation with economic and social development, and iii) need of appropriate sharing system of benefits generated by the Wonogiri dam. Those points should be considered to formulate community development plan for the watershed management.

2.2 Key Consideration Identified in the Stakeholder Meeting for the Watershed Management

Stakeholder meeting was held on May 26, 2005 at the meeting room of BAPPEDA Wonogiri. A total of 52 persons participated in the stakeholder meeting and came from the stakeholders in watershed area of the Wonogiri dam, including the Kabupaten government

agencies related to the watershed management, head of sub-district (kecamatan) offices in the watershed, BPS, and PJT-1. The objectives of the meeting are to: i) introduce the schedule and outline of the JICA Study to all the stakeholders concerned, and, ii) exchange opinions and receive comments form stakeholders concerned to reflect further study content. The outline of the workshop is as follows:

Table 2.2.1 Outline of Stakeholder Meeting (1st)

Time	Program	Presenter
08:00 – 08:30	Registration of Participants	-
08:30 – 08:45	Opening Address	Head of BAPPEDA Wonogiri
08:45 – 09:00	Outline of the JICA Study	JICA Study Team
09:00 – 10:30	Fact findings related to Watershed Management	JICA Study Team
10:30– 10:45	Coffee brake	-
10:45– 11:00	Survey on Village Assessment	Persepsi
11:00– 12:00	Clarification and Discussion	All participants
12:00 – 12:15	Summary of Discussion and Closing Remarks	BPS
12:15 – 13:15	Lunch	-

In the meeting, the issues and key points for the conservation and development in the watershed area were expressed as shown in the next page.

Compared with the workshop I on December 2004, more detailed discussions have been made in terms of issues and needs in the watershed. They expressed comprehensive issues such as topographic issue (steep slope), demographical issue (increase of population density), economical issue (poverty), social issue (intensive dry land cultivation), political issue (need of bottom-up approach), and institutional issue (luck of coordination for watershed management).

Table 2.2.2 Major Points for Watershed Management in the Stakeholder Meeting

Category	Content
Issues and needs on watershed	The main problem existing in Wonogiri watershed is an intensive dry land cultivation, called as a critical social economic condition of the people in the Wonogiri. Since the problem of social economic condition of the people is still unsolvable, the problem of erosion and sedimentation would keep happen.
	There is a lack of applied coordination or management among the institutions and social communities. A good coordination needs to be realized to avoid an ego-centric power of establishing required projects of watershed management..
	Geography: steep-slope uplands are the weakness of the Wonogiri reservoir. Demography: an increase of population will require more lands to expanded steep-slope uplands. Social: Need of key persons supports substantially to farmers in land conservation. Economy: how to supply the water for people upper and around the reservoir?. It is required not only for drinking water but also irrigation water. Politic: Bottom-up approaches are expected to be better than before.
	Upper areas are risky to erosion so that protected forestry zones need to be developed.
Development approach	Technical measures have been failed to overcome the erosion problem. It is therefore required cultural approaches to change the people way of thinking: how to act and how to think about land utilization, land conservation, sustainable reservoir management, etc.
	There will be necessary to implement 1-2 pilot projects on the conservation management to provide best practice to the local people.
Benefit share between watershed and downstream	No benefit share has been realized to society in the upper watershed so far
	During the dry season, 50% of the people in Kecamatan Wuryantoro get income from fishing activities; it is therefore expected that fishing can be sustained through the reservoir conservation.

Source: Minutes of meeting for Stakeholder Meeting on May 26, 2005

It is also confirmed that sub-district (kecamatan) offices in watershed complained about the unequal share of benefits generated by the Wonogiri dam. On the other hand, some sub-district (kecamatan) office appreciated fishery production as positive benefit generated from the Wonogiri dam reservoir.

2.3 Key Consideration Identified in the Second Stakeholder Meeting for the Watershed Management

The Second Stakeholder meeting was held on January 26, 2006 at the meeting room of Wonogiri Kapupaten Government. A total of 60 persons participated in the stakeholder meeting and came from the stakeholders in watershed area of the Wonogiri dam,

including the Kapupatn government agencies related to the watershed management, head of sub-district (kecamatan) offices in the watershed, village offices surveyed, BPS, and PJT-1. The objectives of the meeting are to: i) report results of village assessment and village action plan and, ii) exchange opinions and receive comments form stakeholders concerned to reflect village action plans. The outline of the workshop is as follows:

Table 2.3.1 Outline of Stakeholder Meeting (2nd)

Time	Program	Presenter
08:00 – 08:30	Registration of Attendance	-
08:30 – 08:35	Opening of Workshop	Announcer
08:35 – 08:45	Direction Speech and Opening Remark of Work Shop II	General Manager IPK PWS Bengawan Solo
08:45 – 09:00	Out line of Village Assessment and Village Action Plan	JICA Study Team, Mr. T Gejo
09:00 – 10:30	Presentation of Findings from Village Assessment and Village Action Plan (3 cases)	JICA Study Team (NGO – Persepsi)
10:30– 10:45	Coffee break	-
10:45– 11:00	Conclusion on Village Assessment and Village Action Plan	JICA Study Team (NGO – Persepsi)
11:00– 12:45	Clarification and Discussion	Attendances
12:45 – 12:50	Summary Result of Work Shop II	-

In the meeting, the following issues and key points for the conservation and development in the watershed area were expressed. Compared with the first stakeholder meetings on May 2005, more detailed discussions have been made in terms of issues and needs in the watershed. It is also confirmed important points to be considered in the master plan such as, i) management of state forest, ii) synchronization with GNHRL program, and iii) contribution of beneficiaries.

Table 2.3.2 Major Points for Watershed Management in the Stakeholder Meeting

Category	Content
Issues and needs on watershed	The lack of mechanism of reservoir management should be recovered amongst the providers ('penyedia') and users ('pemanfaat'). The both sides exist in up and down stream area.
	The critical lands were due to people's activities or soil intensification (not agricultural intensification). It requires soil conservation through non-agricultural activities.
	The Local Government was not the only one institution taking responsibility in managing the reservoir watershed, but also involving the others like Perum. Jasa Tirta, PBS, Dept. of Agriculture and Forestry, as well as all institutions concerned.
	Handling of soil / watershed conservation must get involve Perhutani, since there were state forests in large areas in our Kecamatan. Perhutani must also take a responsibility in handling of erosion problem as a result of their existing program of opening land which produces sediment material.
Development approach	Local legislative board should be involved, so that the same perception of land conservation could be achieved. Hence, such submitted proposals can be approved by the board in term of its budgeting.
	The study results of village assessment and action plan should be synchronized with points in GNRHL
Further Action	It was expected that this study results could be finalized shortly. It was therefore able to be inserted to local government development plan through 'APBD' (Local Expenses and Income Budget).
	Farmers' contribution of 50% in soil conservation needs to be re-confirmed as the past experience showed that the bank terraces were planted and lastly broken

Source: Minutes of meeting for Stakeholder Meeting on January 26, 2006

CHAPTER 3 RESULTS OF VILLAGE ASSESSMENT AND VILLAGE ACTION PLAN

3.1 Outline of Village Survey

For understandings of peoples' needs for watershed management, social survey on village assessment and village action plan was proposed. This survey was carried out based on the participatory approach. The objectives of the survey are to: i)assess the present condition, problems, village resources, and development potentials in sample villages, and ii) facilitate the community action plan for soil conservation with economical and social development in terms of the problem solving, effective uses of potentials and conflict resolution.

The NGO Percepsi carried out the survey at the sub-contract basis with the JICA Study Team, since the local NGO, who know the local people and conditions, is more reliable to implement the participatory rural appraisal at the community level. The number of village surveyed was 24 and those villages was selected considering i) degree of erosion based on the JICA Study Result, ii) balance amongst sub-watersheds, and iii) relations between upper and lower watershed. The outline of the survey was as follows:

1) Preparatory work (selection of surveyed village and arrangement of PRA instrument) on May 2005
2) Implementation of village assessment made during June-August 2005

   The field information for village assessment will be collected through in-depth interview, focus group discussion using semi-structured interview list, and also participatory observation. In addition, the survey team will apply PRA tools such as village history, sketch-map, transect, venn-diagram, matrix ranking.
3) Preparation of interim report with analyzed result of the village assessment on Sep and Oct 2005
4) Facilitation of village action plans on Nov and Dec 2005

   Village action plans for soil conservation will be formulated through village workshops considering a priority of problem, alternative solution, necessary actions , and timing and responsibility.
5) Preparation of final report with analyzed result of the village action plans on Jan 2006

Through the above survey and the village worksops, village action plans were formulated as shown in Attachement of this report.

3.2 Fact-findings of the Village Survey

Major fact findings in the survey are attached in the village profiles as Attachment I and broadly summarized in the following sections.

(1) Need for Soil Conservation

The needs analysis result of the proposed village action plan is summarized as below.

Table 3.2.1 Issues Indicated by More Than 30% of Surveyed Villages

Category	Content	No. of Villages	Remarks
Soil Erosion	Shortage of Erosion Control Structure/Many locations of Erosion	22	
Less Forest	Less number of trees in the slope area	11	
	Less number of trees in the state forest area	9	
	Decreasing of springs/groundwater	13	Caused by decreasing of trees
Institutional Issues	Low capacity of existing groups	13	
	Luck of coordination with government agencies	8	
	Less attendance of field officers	9	
Economic Issues	Low income of agriculture	12	
	Insufficient capital of new business	9	

Source: Result of JICA Village Survey made during May – December 2005
Note: Total number of survey village is 24.

Above table indicates that high priority issues of people are soil erosion, less number of tress, less coordination with governmental organizations, low income of agriculture. According to the discussion in the village workshops, people understood that soil degradation has caused low crop yield, so that soil erosion issue is high priority. In addition, people noted that decrease of trees caused negative impacts to water resource as key of their life during dry season. Therefore it could be judged that villages have needs for soil conservation and re-planting.

(2) Priority of Countermeasures for Soil Erosion

People assessed that soil erosion caused by poorly maintained terrace, plantation pattern without consideration of contour, non-functioned drop structure and water way, less vegetation cover than the standard (425 trees/ha). Based on the assessment, the village action plans for soil conservation (VAP) was formulated as shown in the Attachment 2. According to the VAP analysis result, most of villages showed higher priority on civil works such as small gully plugs and improvement of drainage channels for the soil conservation. As next priority, re-planting of trees and terraces rehabilitations are selected. In the village workshops, people noted that civil works need more government assistance, since the more budget is required. Therefore, there is some deference in the priority of countermeasures for soil erosion.

(3) Link with Economic Development

As shown in the needs analysis, economic issues such as low income of agriculture and insufficient capital for new business development are high priority. Most of villages noted in the village workshops that the program on soil conservation should be closely linked to the economic development. Due to the low income and less alternative income source in the village, seasonal migration to large cities is becoming an indispensable family activity to supplement the income. In addition, many young people have to stay in the urban area to get income and do not return to their village. Farmers interests in farming decline and they become reluctant to improve soil condition such as terracing through labor intensive works. Moreover, low economic condition causes illegal

logging in the state forest to supplement the income. The survey team understood that one of the most important aspects in the soil conservation program is economic uplift as the incentive of people.

There is some micro business based on agriculture product with traditional manner in the survey villages. The activities are sales of local traditional snacks, cassava, cashew nut, furniture, operation of small shop or restaurant, and transportations. In addition, there are mining works to collect sand and stone in the rivers. People noted that luck of fund for development of new business and insufficient capacity of business management. People also proposed as potential activities in the village workshops such as: i) livestock rearing using grass for terrace, ii) fruits trees planting, iii) medical plant cultivation under trees, and iv) wood processing.

(4) People Understanding of Soil Erosions

The result of PRA indicated that people knows the location and degree of soil erosion in the village as shown in Attachment 3 and summarized below.

Table 3.2.2 No. of Erosion Location in Surveyed Villages

	Rill (Sheet) Erosion	Gully Erosion	Landslides	River Bank Erosion	Total
Total	213	112	52	155	532
Average	8.9	4.7	2.2	6.5	22.2

Source: Result of JICA Village Survey made during May – December 2005

All the survey villages prepared soil erosion maps and proposed countermeasures by themselves. As results, 532 erosion locations in total and 22.2 locations at an average were identified by the people. That local knowledge should be utilized. On the other hand, there is no correlation between no. of erosion location & area specified by the village and annual sedimentation yield estimated by the JICA Study Team. It indicates that people could not compare to erosion damage in the other villages and assess the soil erosion damage. The survey team understood that proper technical assistance and training will be needed in the assessment of erosion.

People also noted that low capacity of existing groups is one of the key issues for the soil conservation. According to the informal interview in the survey, the old people (more than 55 years) just graduated preliminary school or are illiterate. On the other hand, majority of the people whose age is less than 45 years graduated junior or senior high school. However, people graduated university or institute are very limited.

(5) People's View of Soil Erosion Program

No village noted that the purpose of soil erosion program is to keep the storage capacity of Wonogiri dam in the both process of village assessment and village workshop. They understand that the program should be to maintain the fertility of their agriculture land. On the other hand, the concerns of the people to the dam is very low (almost nothing), since people receive little benefit from the dam.

People assessed that maintenance of structures and terrace tends to decrease after the project was completed, even though the project provided the good impact for soil conservation like the World Bank project. People also noted that involvement of people were not sufficient for selection of site and methodology.

(6) State Forest (Hutan Negara) vs Peoples Forests (Hutan Rakyat)

Out of the 24 village surveyed, 13 villages allied with the State forest. Then 11 of them assessed that management performance of the state forest is not so good. Villages said that the peoples forests are well maintained, while illegal loggings are frequently made in the state forest. Illegal logging caused the soil erosion, appearance of wild monkey and pigs, and decreasing of water resources. People assessed that more involvement for maintenance of state forest will be required and those involvements will contribute to improvement of the maintenance.

(7) Linkage between Water Shortage and Forest Loss

Water resources are available in every village with 6-12 wells that can provide enough water for community people. However, nine villages, especially ones located at higher level, reported the shortage of water resource in the dry season. They pointed out that loss of springs and deepening water level of well were related to forest clearing. Such communities indicated higher priority of both reforestation program and water resource development using deep well.

(8) Share of the Responsibility

People expressed that they are ready to share the responsibility of the soil conservation program. The summary of needed assistance is as follows:

Table 3.2.3 Summary of Needed Assistance from Government

Item	Labor	Materials	Others
Terrace rehabilitation	50% of labor wage should be provided.	Construction materials should be provided, if not available in the village.	-
Structure Rehabilitation or construction	75% of labor wage should be provided.	Construction materials should be provided.	-
Tree planting	0-50% of labor wage should be provided.	Seeds of trees should be provided.	Seeds of inter cropping should be supported.

Source: Result of JICA Village Workshop made in December 2005

They noted that they need the technical and financial assistance of the governments for civil works, while terrace rehabilitation and tree plantings will be made by people themselves with minimum assistance of governments. In addition, people expressed that they will carry out socialization program in the village and each hamlet, establish the implementation committee, preparation of the detailed proposal including cost and location.

(9) Activities of Existing Organizations and Supporting Service

1) Negative impact of seasonal migration

Peoples feel that seasonal migration weaken existing organizations, since 30-60% of households have family members who make migration. As huge population stay out of the village, many organizations are i) just name and no activities, ii) limited activities only during festival period, iii) no periodic meeting amongst member, or iv) less attendance in the meeting . Some people noted that persons who make migration show less concern to the village improvement and activities.

Local NGO also reported that social solidarity in working together as self reliant activities for the village has been upset as a result of grant aid given by the past projects

2) Village government

Village government consisted of the village chief and village representative board, and those organizations exists in all the villages surveyed. People assessed that those organizations have important role in routine administrative works and solution of issue at the village level. Village government have annual plan to handle economic and social problems of village, however no survey village have multi years plan to overcome the serious erosion and improve soil conservation. Some village noted that people do not sometime clearly understand function and output of the village representative board.

3) Farmer groups

There is one farmer group in each hamlet in the survey villages. People understood that the groups were formed for increasing agriculture productivity and implementation of certain project's aim. According to the discussion in the workshop, the activities of farmer groups toward soil and water conservation are mainly maintained during a project period and are not so active after the completion of the project. Half of the group are just name, but people assessed that some groups are still active, since routine meeting is made every month or every 35 days.

4) Forest Conservation Groups

There are 2 farmer groups for watershed conservation in each village in the survey villages. Those groups were formulated during the implementation period of the World Bank project and continued up to now. Those groups become the executive body in the GERHAN. People assessed that the activity and existence of the farmer groups for watershed conservation are depending on the availability of project fund, since they were not so active before the GERHAN.

5) Extension activities

Community feels that the extension staffs of forest or agriculture are relatively far from them, since majority of extension staff comes to the community only when the project was implemented. On the other hand, extension staff noted that they are very busy for the project management due to limited number of staff.

6) Local NGO

It was identified the activities of local NGO for supporting village in the GERHAN program. Their activities are: i) technical and financial assistance for preparation of organic manure, and ii) socialization program. Village Pakisbaru said that they could not fully understand the NGO role due to shortage of socialization program. Some villages also criticized NGO activities, since the local NGO come only when the project was implemented. People noted that local NGO should carry out more socialization program, so that people can more understand the role and function of local NGO.

(10) Case of Jeblogan village

Jevelgon village formulated a unique village action plan. The action plan includes as high priority actions: i) improvement of road access, ii) human resource development

through basic education, iii) digging public well and construction of water saving containers. Following those needs, the soil erosion program was proposed. No village other than Jevelgon village proposed basic human needs, since Jevelgon village is located in the isolated hilly area without proper road system. Special attention and assistance may be required for the villages like Jevelgon village.

CHAPTER 4 COMMUNITY STRENGTHENING PLAN FOR SOIL CONSERVATION

4.1 Basic Strategy

To enhance the project impact and sustainability, the followings will be proposed from social and institutional viewpoints;

(1) Organizational Setting Up at Village Level

- Establishment of implementation committee at village level with transparency of all the process such as member selection, setting role and responsibility, and their activities, and
- Establishment of coordination body between the state forest company and village to explain and discuss the present reforestation program for the state forest.
- Implementation of technical assistance to be made by the consultant as well as facilitation to be made by the local NGO

(2) Peoples' Involvement into the Project

- involvement of the village people into all the process from planning to project monitoring, especially decision making process.

(3) Proper Incentive to Beneficiaries

- provision of proper incentive to increase peoples' motivation such as partial subsidy to labor and material costs, land registration, and training program, and
- establishment of small village grant fund to be utilized under the decision of the implementation committee.

(4) Other

- information dissemination of importance of watershed and Wonogiri dam to the local people, especially young generation.

4.2 Approaches

- The member of implementation committee should be selected with transparency. The major role of the committee is to create the consensus amongst village people and to monitor all the process from the planning to the post-construction. At least, the members should involve the representatives of hamlet, since the activities will be made at hamlet basis. The responsibility as well as member constitution should be discussed in the workshop to create consensus amongst village people. Finally the committee has to be formally authorized by the village administration,
- People should be aggressively involved into all the process from planning to project monitoring. Executing agency should facilitate (not force) the consensus with local people for the project. In that sense, the planning stage is most important, since people would like to decide content of the project by themselves.
- For implementation of PRA, workshops and formulation of the implementation committees, local NGO should be attached as facilitator for all the process. The result of village survey indicates the necessary of qualified facilitator. Considering the present complains to the local NGOs, the implementation committee should be involved in the selection of local NGO process,
- The result of village assessment indicated that village needs the technical assistance

to assess the soil erosion. In addition, further assistance for topographic survey, design and cost estimation will be required. Therefore, the consultant should be attached,

- Demonstration plots for improved terrace with proper vegetation and drainage system should be established in each village, so that people can visually understand the impact of improved terrace. Those demonstration plots will contribute to the project sustainability through well understandings of soil conservation effect caused by the improved terrace,
- Considering low benefit in the short run from agriculture approaches, the proper incentive to the beneficiaries should be introduced, although the some negative impacts caused by heavy subsidy were identified in the past project. The proposed incentives are: i) free of charge for land registration in the terrace rehabilitation or formulation area, ii) subsidy of labor charge at the ratio of 25-50%, iii) subsidy to construction materials and agricultural inputs, and iv) training program for people's capacity building.
- The result of village survey indicates high needs of off-farm income. The soil conservation is closely related to the on-farm income such as annual crop and tree crop productions. To increase the incentive of maintenance work, the future off-farm income such as agro-processing and wood processing should be considered. In the project period, the training program for future processing work will be main, since no production is expected.
- The components for soil conservation will be limited to structure construction against soil erosion, tree planting, and agriculture measures. Those components will be financed by the project. However, the village action plans indicate various needs such as water resources improvement, marketing development, road access improvement. For such needs, it is proposed to establish village grant fund under decision and financial management of the implementation committee. Even though amount of village is limited, the motivation of people will dramatically increase, since people can decide how to use the fund. Referring to the watershed management project under EU assistance, the amount of fund will be around Rs. 40 million per village.
- Even though the state forest company is implementing the forest rehabilitation program, the explanation to and discussion with local people are required. Therefore, coordination body amongst implementation committee/village administration and state forest company should be established in the project,

4.3 Support Programs for Promoting Non-structural Conservation Measures

4.3.1 Support Programs for Community Development

The support programs are formulated aiming at empowerment of village people and organization. The support programs consist of various supports for: i)village assessment based on the PRA, ii) formulation of draft village action plan, iii) establishment of implementation committee, iv) guidance and support of village grant fund, and v) education program on watershed conservation and as shown in Table 4.3.1. The outlines of village ground fund and education program on watershed conservation are shown in Table 4.3.2 and Table 4.3.3, respectively.

4.3.2 Monitoring and Evaluation at Village Level

The monitoring and evaluation (M&E) at village level are formulated aiming at empowerment of village people and organization for feedback and project modification.

The N&E works as empowerment approach should include: i) supervision of the works by the village, ii) project impact analysis by the village, iii) necessity modification of project based on the project evaluation, and iv) knowledge building based on lesson and learn form the project. The (M&E) at village level is shown in Table 4.3.4 and summarized below:

Table 4.3.1 Summary of M&E Plan at Village Level

Category	Item to be monitored	Evaluation
1. Progress of Projects	Establishment of Committee and groups	The timing of the establishment against the schedule
	Progress of project works and supporting program	The achievement against the schedule
2. Impact of Project	Record of demonstration plot	Sedimentation decreasing ratio
	No. of project participants by the work and supporting program	Accumulated number of the participants
	Change of land use, cropping pattern, terrace improvement, farming practice, users etc.	Assessment between before and after the project
	Change of village/groups such as income, NGO involvement, conflicts, etc.	Assessment between before and after the project
3. Feedback to the project design	No. of request to or discussion with the executing agency	Sedimentation decreasing ratio
	Change of the project plan	Assessment between before and after the project

4.4 Implementation Plan

Local people will be the most important factor in good watershed conservation and management. Considering participatory manner to be made by the community and local people, it will be important that, i) people's understandings for the soil conservation through PRA and other surveys, ii) people's initiative through preparation of VAP and formulation of implementation committee, iii) responsibility share between exacting agency and village through formulation of MOU. Therefore, the following nine steps as procedure are proposed in Figure 4.4.1.

The detailed explanation of each step is as follows:.

(1) Village Assessment

The village assessment using participatory rural appraisal (PRA) should be made in order to utilize local knowledge and increase people's understandings on soil erosion. The PRA includes: i) informal interviews, ii) focus group discussion, iii) village history for soil conservation and forestation, iv) participatory mapping, v) institutional relation diagram (Venn Diagram), vi) field transect to identify the eroded location, vii) livelihood and gender role analysis, viii) seasonal calendar, and ix) matrix ranking.

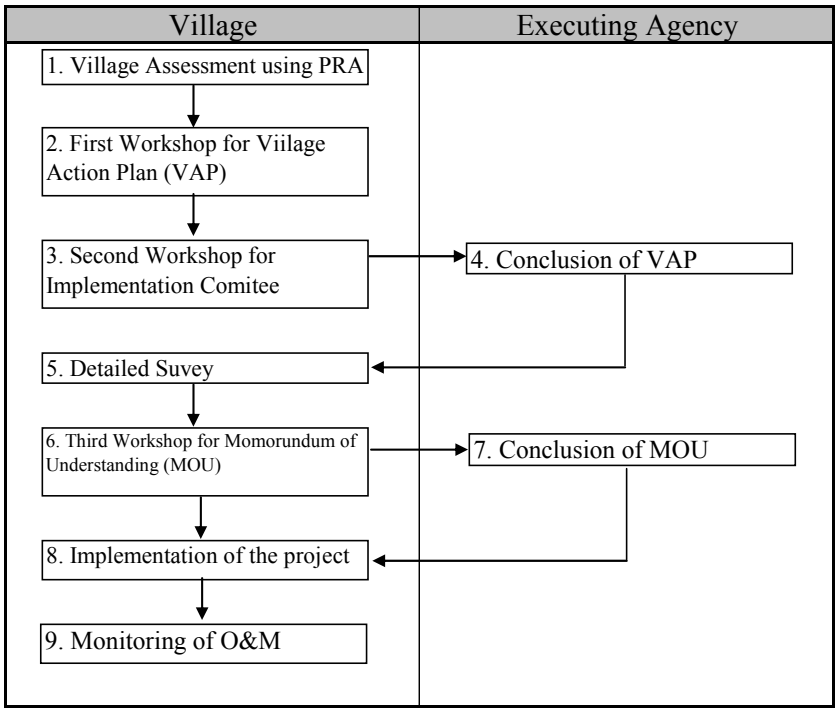


Figure 4.4.1 Implementation Procedure

(2) First Village Workshop

In succession to the village assessment, the village workshop should be held for formulation of an action plan for soil conservation and consensus building for priority of needs and location amongst village people. The workshop includes, i) result of the village assessment, ii) group discussions by topics (ex. review of erosion location, formulation of action plan, and SWOT analysis etc.), iii) presentation of each group, iv) discussion and conclusion, and v) next step.

(3) Second Village Workshop

Implementation committee should be organized in the village through consensus building in the process of the second village workshop. It is noted that the member of implementation committee should be selected with transparency. The major role of the committee is to create the consensus amongst village people and to monitor all the process from the planning to the post-construction.

The representatives of stakeholder groups related to the proposed works should be included as members of committee. The members will involve the representatives of village, farmers group, women group, soil conservation group etc. At least, the members should involve the representatives of hamlet, since the activities will be made at hamlet basis.

(4) Discussion with Executing Agency and Kecamatan (Sub-District) Office

Based on the village action plan for soil conservation, the executing agency and Kecamatan (sub-district) office with discuss the further step (items to be involved in the project, schedule and content of the detailed survey) with the implementation committee.

(5) Implementation of Detailed Survey

The meeting will be held for explanation of discussion results with executing agency as

well as content & schedule of detailed survey. Under the initiative of the implementation committee, village will implement the detailed survey with technical and financial assistance of the executing agency. The detailed survey includes: site selection, topographic survey of the proposed site, design, and cost estimation.

(6) Third Village Workshop

Result of detailed survey will be explained and the implementation plan will be discussed in the third workshop. Based on the conclusion in the workshop, draft memorandum of understanding (MOU) will be prepared for further discussion with executing agency.

(7) MOU Conclusion

Based on the result of the detailed survey, a memorandum of understanding (MOU) on the project should be concluded between executing agency and the implementation committee. The MOU should include: i) components and its work volume covered by the project, ii) share of the responsibility in the implementation stage, and iii) share of responsibility in the operation and maintenance stage.

(8) Implementation of Project

Before the commencement of the project, the content of the MOU and the procedure of the project will be explained to the whole village. The project included the following components; i) terrace improvement works, ii) terrace formation/upgrading works, iii) village grand fund, iv) monitoring and evaluation, v) support programs for soil & water conservation measures, vi) support programs for land management & agricultural promotion measures, and vii) support programs for community development

All the work including administration one should be made under the monitoring of the implementation committee. The issues and their countermeasures should be discussed from time to time. The progress report will be prepared at quarter basis and submit to both Kecamatan (sub-district) office and executing agency.

(9) Monitoring of O&M and Socialization to the Whole Village

After the project implementation, the monitoring of implementation committee should be continued. The committee should monitor the operation and maintenance condition of the project facilities including terrace, water way, drop structures, planted trees etc. The monitoring result should be explained and discussed through socialization program.

4.5 Priority and Implementation Schedule of Subject Area

For the implementation of the project, priority of subject area is set-up for the step-by step implementation, since the project can not cover those huge area (34,400 ha) at once for the implementation. The basic approach for the prioritization is as follows:

- The all the works should be made at village basis, since the implementation committee will handle the works with technical assistance of the executing agency.
- To avoid the conflict amongst villages, the project should implement in all the villages located in the same sub-watershed as much as possible. Local NGO also noted that equal implementation amongst sub-watersheds is not recommended.
- Higher priority should be put to the sub-watershed located near dam site such as Keduan sub-watershed, since protection of intake against sedimentation is most important and urgent.

Base on the above approach, the prioritization and implementation schedule is set-up as shown in the following figure. The project will be implemented in 40-50 numbers of

village at annual average.

Sub-Watershed	No. of Village	1st	2nd	3rd	4th	5th	6th
Keduang (1)	43						
Keduang (2)	40						
Remnant	2						
Tirtimoyo	29						
Wuryantoro	7						
Ngunggahan	7						
Temon	8						
Upper Solo	25						
Alang	19						
Total	180						

: Socialization and Planning
: Implementation
: Monitoring

Figure 4.5.1 Implementation Schedule for Watershed Management

4.6 Proposed Implementation Arrangements at Field and Village Level

(1) Organizational Structure

In the watershed area, famers holding size is limited and measures will become a dispersed manner with limited effects when measures are introduced individually by interested farmers. Therefore, community based introduction of measures is to be envisaged, which dictate understanding and agreement on proposed measures by a number of small scale farmers. Local people will be the most important factor in good watershed conservation and management. Therefore, communities at field and village level should take a responsible role for the proposed watershed conservation as practitioners from the stage of planning and collaborative activities of all stakeholders, communities and implementing agencies, for the implementation of the conservation are essential.

The proposed implementation arrangement at field and village level, therefore, should be initiated with the implementation committee to be established at the village level. The member of implementation committee should be selected with transparency in the beginning of the implementation under the guidance and support of the executing agency or NGOs or by the both. The formation and empowerment of beneficiaries or practitioners groups, Kelompok Konservasi Tanah dan Air (K2TA; Soil & Water Conservation Farmer Group) will also be formulated. Such formation and induction empowerment guidance is to be executed in a year prior to the implementation of conservation measures after the socialization of the measures or project activities. Following the formation of K2TA, K2TA empowerment program should also be implemented in the 1st year. After such a preparatory stage in the 1st year, Terrace Improvement Works, Terrace Formation/Upgrading works consisting of physical measures, vegetative measure and farming support program and Agro-forestry Development are to be implemented from the 2nd year as shown in Fig. 4.4.1.

The proposed organization set-up at field and village level for the implementation is K2TA at farmer/farmer group level and Village K2TAs at village level as shown in Fig. 4.4.2. K2TA is to be formed as a practitioner at farmer/farmer group level and Village

K2TA is to be established as a practitioner at a village level.

(2) Role and Responsibility amongst Stakeholders at Village Level

To avoid confusion amongst stakeholders, the role and responsibility should be defined. The role and responsibility should be finalized in the workshops with consent amongst people. However, the tentative role of each component will be presented as follows:

Table 4.6.1 Role of Stakeholders Concerned

Component	Executor	Supervisor	Supporter
1. Terrace Improvement Works	K2TA	Implementation Committee	Extension staffs (PPL/PKL) and Executing Agency
2. Terrace Formation/Upgrading Works	Contractor and K2TA	Implementation Committee	Extension staffs (PPL/PKL) and Executing Agency
3. Village Grant Fund	Village people	Implementation Committee	NGO and Executing Agency
4. Monitoring & Evaluation	K2TA	Implementation Committee	NGO and Executing Agency
5. Support Programs for Soil & Water Conservation Measures	Extension staffs (PPL/PKL) and Consultant	Implementation Committee	Executing Agency
6. Support Programs for Land Management & Agricultural Promotion Measures	Consultant	Executing Agency	-
7. Support Programs for Community Development	K2TA and other village organizations	Implementation Committee	NGO and Executing Agency

Based on the above role of each organization concerned, the tentative responsibility of each stakeholder will be as follows:

Table 4.6.2 Responsibility of Stakeholders Concerned

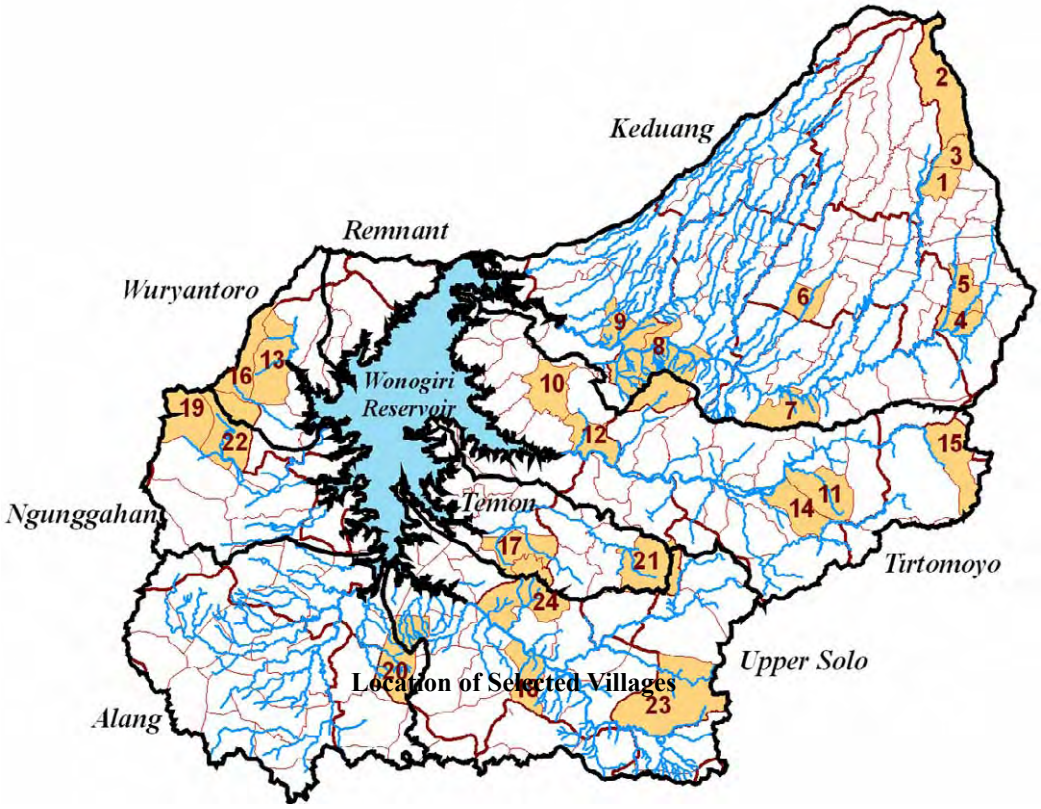
Stakeholders	Responsibility
Farmers	Operation and maintenance of individual land
K2TA	Terrace improvement and upgrading
Contractor	Terrace formulation and supply of materials
Implementation Committee	Supervision of all work, coordination with executing agency, and operation of village grant fund
Extension staffs (PPL/PKL)	Technical training and guidance to K2TA
Consultant	Technical training and guidance to Extension staffs
Executing Agency	Supervision of project implementation, coordination with Implementation Committee, and operation of project fund

Attachment
Village Action Plan

Summary of Selected Villages

No.	Village Name	Kecamatan Name	Watershed	Erosion Area (ha)	Observed Eroded Location	Number of Land Owner (Farmer)	Page
1	Karang	Slogohimo	Keduang	61	11	174	A-2
2	Setren	Slogohimo	Keduang	125	12	328	A-3
3	Sokoboyo	Slogohimo	Keduang	136	11	291	A-4
4	Watusomo	Slogohimo	Keduang	-	16	-	A-5
5	Pandan	Slogohimo	Keduang	71	11	176	A-6
6	Sumberejo	Jatisrono	Keduang	33	13	120	A-7
7	Pingkuk	Jatiroto	Keduang	67	7	113	A-8
8	Sembukan	Sidoharjo	Keduang	120	20	290	A-9
9	Gemawang	Ngandirojo	Keduang	72	17	216	A-11
10	Beji	Nguntoronadi	Tirtomoyo	29	9	104	A-12
11	Hargorejo	Tirtomoyo	Tirtomoyo	18	7	95	A-13
12	Kulurejo	Nguntorona	Tirtomoyo	93	9	211	A-14
13	Pulutan Kulon	Wuryaran	Wuryantoro	-	-	-	A-15
14	Sukoharjo	Tirtomoyo	Tirtomoyo	-	15	194	A-16
15	Pakisbaru	Nawangan	Tirtomoyo	35	7	74	A-18
16	Pijiharjo	Manyaran	Wuryantoro	-	-	-	A-18
17	Belikurip	Baturetno	Temon	-	5	-	A-19
18	Ngancar	Giriwoyo	Upper Solo	-	8	-	A-20
19	Ngandong	Eromoko	Alang-Ngunggahan	-	12	-	A-22
20	Platarejo	Giriwoyo	Upper Solo	-	-	-	A-24
21	Tegiri	Batuwarno	Temon	-	13	-	A-26
22	Tempurharjo	Eromoko	Alang-Ngunggahan	-	14	-	A-27
23	Jeblogan	Karangteng	Upper Solo	-	11	-	A-28
24	Selomerto	Giriwoyo	Upper Solo	-	9	-	A-29

Source: JICA Study Team



Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
Village Action Plan of KARANG											
1. Minimum of erosion control structutures, i.e. drop structure and check dam	Control erosion by construction of check dam	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of check dam -Preparation of construction material for construction of check dam -Implementation of check dam construction	Construction of check dam in village for erosion control	Construction of 2 check dam is completed in one sub village	Kandangan	X					Community Related Institution
	Control erosion by construction of drop/anggel structure	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of drop/anggel structure -Preparation of construction material for construction of drop/anggel structure -Implementation of drop/anggel structure construction	Decrease of high inflow of river water in rainy season so it will control/decrease erosion	74 pcs drop structures are constructed in all of village area	Karang Kandangan Dawung Kecik	X					Community Related Institution
	Control erosion by construction of Talud (river bank protection)	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the quantity/area of terrace that have to be rehabilitated -Preparation of construction material for construction of talud structure -Implementation of talud structure construction/rehabilitation	Decrease erosion rate along river bank by construction of permanent river bank protection (talud)	The length of river bank about 200 m in 1 sub village become safe from erosion	Kecik	X					Community Related Institution
	Control erosion by rehabilitation of terraces	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of terrace structure -Implementation of terrace rehabilitation -Implementation of vegetation covers	It has been rehabilitated terrace in farmer land, which side erosion is observed, by them selves.	Terraces rehabilitation in area of about 60.09 ha at all of village area, which side erosion is observed.	Karang Kandangan Dawung Kecik	X					Community Related Institution
2. Many erosion controller structures are damaged, so that those became disfunction.	Rehabilitation of existing damaged structures	- Discussion about the damaged erosion control structure mapping - Adjustment of the need of rehabilitation of erosion controller structure - Preparation of construction material for construction of erosion controller structure -Implementation of activity	Rehabilitation of erosion controller structure which are damaged	Dropstructure and check dam which are damaged is functional at all of sub village.	Karang Kandangan Dawung Kecik		X				Community Related Institution
3. Harvest price is lower than production cost	Building market network	-FGD about agriculture market issues -Identify agriculture product -Building agriculture market network	Institutionalization of market network for every agriculture product in or out of village	There are market network for farmer in all of village area	Karang Kandangan Dawung Kecik		X				Community Related Institution
	Standardization on harvest price for farmer benefit	-Identify existing farmer group -Coordination with all of group member -Propose to government for harvest market price protection	Selling price of harvest became good price	There are regulation that protect harvest selling price of farmer and market price	Karang Kandangan Dawung Kecik		X				Community Related Institution
4. Minimum big tree in slope area	Regreening by productive plantation	-FGD about the need of regreening -Mapping land area that need more tree crops -Implementation of planting tree crops	It has been planted tree crops in community land	Quantity of land coverage in community land is increase by teak and sengon laut	Karang Kandangan Dawung Kecik			X			Community
5. Distribution of seed is not timely (from project)	Revision of project management	- Propose to project authority to distribute seed at the right time	Project management was improved based on local condition consideration	Decrease of seed death percentage and type of seed that is good for local condition are multiplied such as teak and sengon	Karang Kandangan Dawung Kecik			X			Community Related Institution
6. Low knowledge of community about conservation technique	Socialization from related agency	-Coordination between existing farmer groups -Identify about conservation issues -Coordination with related agency -Implementation of socialization	Various farmer problem related with conservation could be handled	Land condition in Karangan village is managed based on environmental consideration principle	Karang Kandangan Dawung Kecik				X		Community Related Institution
7. Low capacity of group members (RT, Farmer group, Regreening group)	Group assistance and training	-Coordination between existing regreening group -Identify capacity of group official -Coordination with related agency -Training to increase the capacity of group members	increase of group members capacity by training from related agency	There are facilities for capacity building of group members in the whole of villages	Karang Kandangan Dawung Kecik				X		Community Related Institution
8. Not all of issues in village are followed up by existing village institution	Coordination of all existing village institution with community	-Identify existing village institutions -Coordination with every village institutions official -Conducting first meeting to discus about coordination issues -There are memorandum of understanding about implementation of routine coordination	It has been done routine coordination between institutions in village or with the community	All of problem could find alternative solution rapidly	Karang Kandangan Dawung Kecik				X		Community Related Institution
9. Insufficient capital and limited source of production for small industry in village.	Support for small industry	-Coordination between small industry business in village -Identify issues -Propose fund for capital investment for craftsman to other institution	Cooperation on capital investment to develop economic activity in village from other institution	52 small businessman at village have sufficient capital and source of production to develop their activity	Karang Kandangan Dawung Kecik					X	Community Related Institution

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
10. There is soil disposal to the river for making paddy field or house	Increase community awareness by socialization	-Socialization/assistance about conservation principle	Increase of community awareness about conservation principles	Land collapse by soil disposal habit is decreased	Karang Kandangan Dawung Kecik					X	Community Related Institution
Village Action Plan of SETREN											
1. Minimum of erosion control structutures and most of them are collapsed.	Rehabilitation of erosion controller structure	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of erosion controller structure -Preparation of construction material for construction of erosion controller structure -Implementation of erosion controller structure construction	Rehabilitation of erosion controller structure which are collapsed	The erosion controller structures which are collapsed are functional at all of sub village.	Ngrapah Setren Kembang Salam	X					Community Related Institution
2. So many erosion location	Control erosion by construction of check dam	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of check dam -Preparation of construction material for construction of check dam -Implementation of check dam construction	Construction of check dam in village for erosion control	Construction of 3 check dams in 2 sub village	Setren Salam	X					Community Related Institution
	Control erosion by construction of drop/anggel structure	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of drop/anggel structure -Preparation of construction material for construction of drop/anggel structure -Implementation of drop/anggel structure construction	Decrease of high inflow of river water in rainy season so it will control/decrease erosion	Construction of 61 drop structures in 4 sub villages	Ngrapah Setren Kembang Salam	X					Community Related Institution
	Control erosion by construction of Talud (river bank protection)	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the quantity/area of terrace that have to be rehabilitated -Preparation of construction material for construction of talud structure -Implementation of talud structure construction/rehabilitation	Decrease erosion rate along river bank by construction of permanent river bank protection (talud)	Along river bank in Setren sub village is safe from erosion	Setren		X				Community Related Institution
	Control erosion by construction of Pond (rorak)	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of rorak -Preparation of construction material for construction of rorak in all land -Implementation of rorak construction in all land	Construction of pond in all farmer land by themselves	7.35 Ha farmer land area in Setren sub village is safe from erosion	Setren		X				Community
	Control erosion by rehabilitation of terraces	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of terrace structure -Implementation of terrace rehabilitation -Implementation of vegetation covers	It has been rehabilitated terrace in farmer land, which side erosion is observed, by them selves.	Terraces rehabilitation in area of about 124.81 ha at all of village area, which sheet erosion is observed.	Ngrapah Setren Kembang Salam		X				Community Related Institution
	Control erosion by construction of recharge/absorb wells	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of recharge/absorb wells -Implementation of recharge/absorb wells construction.	Recharge/absorb wells have been constructed in farmer land	In house yard in 1 (one) sub village is 8.5 ha, recharge/absorb wells have been constructed.	Kembang		X				Community Related Institution
3. Low selleing price of agriculture production (casava, paddy, corn, soy, clove)	Building market network	-Coordination between group members -Identify agriculture product -Building agriculture market network	Market network for agriculture product was existed.	There are market network for farmer in all of village area	Ngrapah Setren Kembang Salam			X			Community Village goverment Related Institution
	Advocating for Farmer	-Coordination with all of group member -Propose to government for harvest market price protection	Selling price of harvest became good price	There are regulation that protect harvest selling price of farmer and market price	Ngrapah Setren Kembang Salam			X			Community Village goverment Related Institution
4. Existing groups (community forest, farmer group, LMDH) are not optimally functional	Capacity building for group members	-Coordination between existing regreening group members -Identify capacity of group members -Coordination with related agency -Training to increase the capacity of group members	Increase of group members capacity by training from related agencies	There are facilities for capacity building of group members in the whole of villages.	Ngrapah Setren Kembang Salam			X			Community Related Institution
	Group assistance	-Coordination between groups -Implementation of assistance to facilitate groups	Existing group are facilitated	Functions of groups are optimized.	Ngrapah Setren Kembang Salam			X			Community Related Institution
5. Low knowledge of community about conservation technique	Socialization from related agency	-Coordination between existing farmer groups -Identify about conservation issues -Coordination with related agency -Implementation of socialization	Various farmer problem related with conservation could be handled	Land condition in Setren village is managed based on environmental consideration principle	Ngrapah Setren Kembang Salam				X		Community Related Institution

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
6. Monkeys as pest attack can not be handled	Control monkey by coordination with related institution.	- Identify monkey attack - Meeting between, farmers, groups, village government.	Monkey attack to farmer area has been controlled.	Farmer plantations are free from monkey attack in all of village	Ngrapah Setren Kembang Salam					X	Community Village goverment Related Institution
7. Limited of empon-empon (medical plants) seed for plantation under big tree	Distribution of empon-empon (medical plants) seed (red ginger, small ginger, yellow ginger)	- Identify the need of seed of every groups - Distribute seed based on requirement	Seed requirement for every big tree has been fulfilled.	Farmers get sufficient seed for their land in all of the village	Ngrapah Setren Kembang Salam					X	Community Famer groups Related Institution
8. Insufficient capital to conduct the activity for handicraftsman, merchant, or farmer.	Cooperation with other institution	- Coordination between handicraftsman, merchant, and farmers at village. - Identify capital issues - Fund raising to other institution	Cooperation on capital investment to develop economic activity in village from other institution	50 % of handicraft man, merchant and farmer at village have sufficient capital to develop their activity	Ngrapah Setren Kembang Salam					X	Community Village goverment Related Institution
9. Minimum land coverage by tree crops	Installing tree crops	-Socialization the result of VAP to community, specially if their lands include in erosion location -Increase the awareness about type of plantation to be chosen and decided the quantity of plantation for regreening requirement -Doing planting activity	Planting tree crops especially at slope area.	Quantity of tree crops is increase at every slope area in 4 sub villages about 124.81 Ha	Ngrapah Setren Kembang Salam					X	Community Related Institution
Village Action Plan of SOKOBOYO											
1. So many erosion location	Control erosion by construction of check dam	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of check dam -Preparation of construction material for check dam -Implementation of check dam construction	Construction of check dam in village for erosion control	Construction of 1 check dam in village	Sokoboyo	X					Community Related Institution
	Control erosion by construction of drop/anggel structure and check dam	-Socialization the result of VAP to community, especially if their lands include in erosion location -Adjustment of the location and quantity of drop/anggel structure and check dam -Preparation of construction material for construction of drop/anggel structure and check dam -Construction of drop/anggel structure and check dam	Drop structure/ check dam in village has been constructed to control the erosion.	Control gully erosion with area of about 11.005 Ha and river bank erosion with area of 1.511 Ha by drop structure/check dam in all of village area	Sokoboyo Kembang Dawuhan Geneng	X					Community Related Institution
	control erosion by construction of Pond (rorak)	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of rorak -Preparation of construction material for construction of rorak in all land -Implementation of rorak construction in all land	Construction of pond in the farmer land by themselves	There are roraks on the land with area of 54.6 ha by farmer in 1 sub village	Sokoboyo	X					Community
	control erosion by rehabilitation of terraces	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of terrace structure -Implementation of terrace rehabilitation -Implementation of vegetation covers	It has been rehabilitated terrace in farmer land, which side erosion is observed, by them selves.	Terraces rehabilitation in area of about 135.51 ha at all of village area, which sheet erosion is observed.	Sokoboyo Kembang Dawuhan Geneng	X					Community Related Institution
	control erosion by drainage rehabilitation	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of drainage rehabilitation -preparation and organization for implementation of activity -Implementation of drainage rehabilitation in farm land.	Drainage canal in farmer land has been rehabilitated by themselves, which always get sheet erosion, so that the water inflows safety.	There is surface water inflow safety on drainage canal at farmer land with area about 135.51 Ha in all of village.	Sokoboyo Kembang Dawuhan Geneng	X					Community
	Control erosion by construction of Talud (river bank protection)	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the quantity/area of terrace that have to be rehabilitated -Preparation of construction material for construction of talud structure -Implementation of talud structure construction/rehabilitation	Decrease erosion rate along river bank by construction of permanent river bank protection (talud)	River bank area of 1.511 ha in 3 sub-villages is safe from erosion.	Kembang Dawuhan Geneng	X					Community Related Institution
2. Minimum of erosion control structutures and most of them are collapsed.	Rehabilitation of existing structures (civil technique)	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of erosion control structure -Preparation of construction material for erosion control structure -Implementation of activities	Rehabilitation of erosion controller structure which are collapsed	The erosion controller structures which are collapsed are functional at all of sub village.	Sokoboyo Kembang Dawuhan Geneng		X				Community Related Institution
3. Low knowledge of community about conservation technique	Socialization from related agency	-Coordination between existing farmer groups -Identify about conservation issues -Coordination with related agency -Implementation of socialization	Various farmer problem related with conservation could be handled	Land condition in Sokoboyo village is managed based on environmental consideration principle	Sokoboyo Kembang Dawuhan Geneng		X				Community Related Institution

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
4. Insufficient capital to develop the activity.	Cooperation with other institution	-Coordination between businessmen at village. -Identify capital issues -Fund raising to other institution	Cooperation on capital investment to develop economic activity in village from other institution	50 % of businessman at village have sufficient capital to develop their activity	Sokoboyo Kembang Dawuhan Geneng			X			Community Related Institution
5. Limited water in dry season for irrigation to farmland	Manage irrigation by rotation system	-Farmer meeting by participation of water controller -Stipulate manner of water distribution by rotation system	Implementation of equal water distribution by rotation system.	Farmer feel fair on water distribution	Sokoboyo Kembang Dawuhan Geneng			X			Community Water contoler
	Construction of deep well	-Farmer meeting by participation of water controller -Adjustment of the location and quantity of deep well requirement -Preparation of construction material for construction of deep well -Implementation activity	Deep wells have been constructed in all village area	Farmer can get enough irrigation water for their farm land during dry season	Sokoboyo Kembang Dawuhan Geneng			X			Community Related Institution
6. Poor coordination with government officer/related agency	Coordination with related agency	-Coordination with existing farmer group -Identify issues related to limited socialization from government officer -Coordination with village government and related agency	Farmer activities, in village, are routinely coordinated with government officer of related agency.	There are routine co ordinations with related agency.	Sokoboyo Kembang Dawuhan Geneng				X		Community Related Institution
7. Harvest price is lower than production cost	Standardization on harvest price for farmer benefit	-Identify existing farmer groups -Coordination with all of group members -Build farmer group network -Propose to government for harvest market price protection	Selling price of harvest became good price	There are regulation that protect harvest selling price of farmer and market price	Sokoboyo Kembang Dawuhan Geneng				X		Community Related Institution
8. Minimum big tree in slope area	Regreening by productive plantation	- Socialize need of regreening -Implement regreening	It has been planted trees in community land	Quantity of land coverage in community land is increased and the technical standard is utilized	Sokoboyo Kembang Dawuhan Geneng					X	Community
	Law enforcement on logging	- Socialize existing regulation to the community - Implement punishment to the outlaw	Community has already understand and follow the logging regulation	Logging is made according to the regulation	Sokoboyo Kembang Dawuhan Geneng					X	Community
9. Existing groups are dysfunctional.	Group assistance from related agency	- Coordination between existing group members - Contact to related agency -Organizational empowerment for group	Groups are functional again.	Groups are doing routine activity in village area.	Sokoboyo Kembang Dawuhan Geneng					X	Community Village goverment Related Institution
10. Insufficient capital o develop the activity for handicraftsman, merchant, or farmer.	Cooperation with other institution	- Coordination between handicraftsman, merchant, and farmers at village. - Identify capital issues -Fund raising to other institution	Cooperation on capital investment to develop economic activity in village from other institution	50 % of handicraftsman, merchant, and farmer at village have sufficient capital to develop their activity	Ngrapah Setren Kembang Salam					X	Community Village goverment Related Institution
11. Minimum land coverage by tree crops	Installing tree crops	-Socialization the result of VAP to community, specially if their lands include in erosion location -Increase the awareness about type of plantation to be choose and decided the quantity of plantation for regreening requirement - Doing planting activity	Planting tree crops especially at slope area.	Quantity of tree crops is increase at every slope area in 4 sub villages about 124.81 Ha	Ngrapah Setren Kembang Salam					X	Community Related Institution
Village Action Plan of WATUSOMO											
1. Many erosion locations/bank collaps at river bank and road side	- Control the erosion - Regreening - Coordination with related agencies	-Socialization of VAP to the village people, especially of eroded location -Defining and determining the location and dimension of drop structures -Preparation of materials for structures - Execution of erosion control structures	Erosion control facilities and regreening are implemented	54 drop structures have been constructed and regreening has been implemented, in four sub villages.	Deles; Bandung; Dologan and Watusomo	X					Community Village goverment Related Institution
2. Coordnation between related institution in the village are weak so that solution can not be done immediately	Coordination and approaches should be done through regular meeting (monthly meeting)	-Identifying institutions in the village. -Coordination among the organizations board -Hold a preliminary meeting to solve coordination constraints -Agreement for coordinated regular meeting	Coordination among institutions in the villages has been settled.	Alternative for problem solving will be obtained easier.	Watusomo Village	X					Institutions in the village and Local Government
3. Many erosion control structures and facilities (check dams, terraces, etc.) were damaged	Renovation or rehabilitation should be carried out	-Socialization of VAP to the village people, especially of eroded location -Defining and determining the location and dimension of drop structures -Preparation of materials for structures -Execution of erosion control structures	Renovation or rehabilitation of related damaged facilities have been done	Renovation/rehabilitation of erosion control structures/facilities in four sub villages are done.	Watusomo Village	X					Community Local Government and related agencies
4. Decrease of water springs	Regreening of people forest and state forest	-Socialization of VAP to the village people, especially of eroded location -Reassuring the selected crops/trees to be planted, -Defining the density of plantation -Regreening of the target area	Selected crops/trees are planted	The amount or density of trees in each area in the sub villages should have been increased, by 5 teakwood trees per family	Watusomo Village		X				Community Local Government and related agencies
5. Market price of agricultural product became low	Policy to protect the market price should be introduced	-Identification of existing farmer groups -Coordination among groups -Activate farmer's groups networks -Request the Government to protect the agricultural product market price	Each agricultural product is proper market price	A policy to protect the agricultural product market price is established.	Watusomo Village			X			Community Local Government and related agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
6. State forest area is bare condition	- Social awareness on forestry should be made up - Regreening - Law enforcement	- Socialization on the necessity of forestry - Regreening activity - Socialization on the law enforcement - Sanction application to any transgression on forestry	- Social awareness to forestry conservation increases - Regreening in state forestry are implemented	The amount/density of trees in state forestry fulfill the standard requirement.				X			Community Local Government and related agencies
7. Limited capital for village trade development	Cooperation with third parties are developed	- Request application for capital supports for trade development	Cooperation between the traders/ entrepreneurs and third parties are developed	There are 98 traders/entrepreneurs should have obtained supporting capital.	Watusomo Village				X		Community Local Government and related agencies
8. Not enough knowledge among communit people, especially on conservation aspect	Regular guidance/elucidation are necessary with participation related agencies	- Coordination among the existing farmer's group - Identify the main issues which need knowledge building - Contact and develop cooperation and coordination for knowledge building	Many issues on farmers' relation are solved	The condition of environment of Watusomo Village have been in right way	Watusomo Village					X	Community Local Government and related agencies
9. Planting/seeding selection are not suitable for regreening (Pinus)	The people should be involved from the beginning of design	- Coordination among related agencies/institutions - Identify suitable seeds, which farmers will be interested - Suggest suitable seeds, which farmers will be interested	All regreening seeds are suitable with the village condition and farmers' interest.	Seeds which are selected are suitable with framer's interest	Watusomo Village					X	Community Local Government and related agencies
Village Action Plan of PANDAN											
1. So many erosion location	Control erosion by construction of check dam	-Socialization of result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of check dam -Preparation of construction material for construction of check dam -Implementation of check dam construction	Construction of check dam in village for erosion control	Construction of 5 check dam is completed in 2 sub village (Pandan and Tanjung)	Pandan Tanjung	X					Community Related Institution
	Control erosion by construction of drop/anggel structure	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of drop/anggel structure -Preparation of construction material for construction of drop/anggel structure -Implementation of drop/anggel structure construction	Decrease of high inflow of river water in rainy season so it will control/decrease erosion	Construction of 10 drop structure is completed in 3 sub villages	Pandan Tanjung Kembar	X					Community Related Institution
	Control erosion by construction of Talud (river bank protection)	-Socialization the result of VAP to community, specially if their land include in erosion location -Adjustment of the location and quantity of talud structure -Preparation of construction material for construction of talud structure -Implementation of talud structure construction/rehabilitation	Constructed permanent river bank protection with length about 50 m	River bank about 50 m is safe from erosion	Jatirejo	X					Community Related Institution
2. Decrease of ground water	Regreening	-Socialization the result of VAP to community, specially if their lands include in erosion location -Give understanding about type of plantation to be chosen and adjust quantity of plantation for regreening requirement -Implementation of activity	It has been planted treecrops specially in slope area	No. of tree crops increase in every slope area in sub village with 70.83 ha.	Pandan Kembar	X					Community
	Construction of deep well	-Socialization the result of VAP to community, specially if their lands are include in erosion location -Adjustment of the quantity and location deep well to be constructed -Implementation activity.	It has been constructed deep well in farmer land	Land of every home yard in 2 sub village are constructed deep well	Pandan Tanjung	X					Community
3. Limitation of cooperation on erosion countermeasure (Financial) with other organizations	Cooperation with other institutions	- Propose erosion control budget to other institution	It has been done cooperation between village government and other agency for supporting cost on controlling erosion	There is agency/institution to support budget for controlling erosion in village.	Pandan Village.		X				Villagers and Related Agencies
4. Many terrace collapsed and never maintained	Terrace rehabilitation	-Socialization the result of VAP to community, specially if their lands include in erosion location -Adjustment of the location and quantity of terrace structure to be rehabilitate -Preparation of construction material for rehabilitation of terrace -Implementation of terrace construction/rehabilitation	It has been done terrace rehabilitation in farmer land	It has been done terrace rehabilitation specially where is many side erosion	Pandan Village.		X				Villagers and Related Agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
5. Role of local organizations (Forestry farmer Group/KTH, Community organization surrounding Forrest area/ LMDH) and community surrounding forest area are not optimal	Empowerment for Community Organization surrounding forest area	- Organization empowerment: technical assistance and training - Socialization about the importance of forest sustainable	- Community Organization surrounding forest area are optimally functional - Increase of community knowledge about the importance of forest sustainable	- 2 Community organization surrounding forest area are optimally functional in village area - Forrest as a buffer area can functional again	Pandan Village.			X			Villagers Group and Related Agencies
6. Distribution of seed is not timely (from project)	Seeds are timely distributed (from project)	- Propose to project authority to distribute seed at the right time	Seeds are timely distributed (from project)	Decrease of seed death percentage	Pandan Village.			X			Community Village government
7. Regreening in state forest area is not maximum yet	Regreening	- Planting combine system (Teak)	It has been done regreening in perhutani area	Quantity of land coverage in perhutani area is utilize according to the technical standard	Pandan Village.				X		Community Related agency
	Law enforcement	- Socialization about forest management	There are MOU about forest management with community	Forest management by community base on MOU	Pandan Village.				X		Community Village government
8. Insufficient capital for business development in village.	Cooperation with other institution	- Propose fund for capital investment for craftsman to other institution	Cooperation on capital investment between craftsman and other institution	50 % of existing craftsman get supporting capital	Pandan Village.					X	Community Village government Related agency
9. There are unstable soil excavation for roof tile made industry	Increase the understanding about conservation principles	- Socialization/assistance about conservation principles	There are the increase of community awareness about conservation principles	Land collapse for roof tile industry are decrease until 50 %	Pandan Village.					X	Community Village government Related agency
Village Action Plan of SUMBEREJO											
1. Most of erosion control structures are damaged	Improvement or rehabilitation of erosion control structures Additional erosion control structures/check dams are necessary	-Discussion with the people on the design of improvement or rehabilitation should be made against the damaged -Define the location of damaged structures with the people -Define the amount of structures necessary to be improved or rehabilitated or to be added -Construction material preparation -Implementation of construction	Improvement and rehabilitation of erosion control facility have been implemented.	Erosion control structures has been rehabilitated with dimension of l=10 m and d=4 m and function well in the sub village	Mandan	X					Community, Local Government and related agencies
2. Many erosion locations	Erosion countermeasures by constructing drop structuresand check dams	- Discussion on the draft of village action plan with the people - Identifying the location and dimension of drop and check dam structures - Preparation of construction materials -Implementation of construction	Erosion control facility (check dam and drop structures) have been implemented	There are 33 drop structures are constructed in all sub villages	Tanggung Mandan Jelog Cobor	X					Community, Local Government and related agencies
	Erosion countermeasures by constructing bank protection	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of bank structures -Identifying the necessary amount of structures -Preparation of materials for structures -Execution of erosion control structures construction	Erosion rate along the river is decreased	River bank at Cobor sub village (300 m), at Mandan sub village (25 m) and at Tanggung sub village (88 m) has been recovered from erosion	Tanggung Mandan Cobor	X					Community, Local Government and related agencies
	Erosion countermeasures by constructing drop structures	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of drop structures -Identifying the necessary amount of structures -Preparation of materials for structures -Execution of erosion control structures construction	Erosion rate along the canal is decreased	Erosion along the canal in the sub villages has been overcome.	Mandan	X					Community Local Government and related agencies
	Erosion countermeasures by constructing errosion protection ponds	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of pond structures -Identifying the necessary amount of structures -Preparation of materials for structures -Execution of erosion control structures construction	Erosion protection ponds have been constructed through people self efforts	There are erosion protection ponds in the area of 2.2 ha by farmer's (9 farmers in 1 sub village) self effort.	Tanggung	X					Community
	Erosion countermeasures by constructing drainage structures	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of drainage structures -Identifying the necessary amount of structures -Preparation of materials for structures -Execution of erosion control structures construction	Sheet erosion in the area of farmers' yards have been overcome by farmers' self efforts	Sheet erosion have been controlled well in the sub villages by construction of 236 m long of drainage canal in 3 sub villages.	Tanggung Mandan Cobor	X					Community Local Government and related agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
3. Many deteriorated terraces	Improvement of terraces	-Discussion on the draft of terraces improvement with the people -Identifying the location and area of terraces necessary to be improved -Preparation of materials for terraces improvement (civil structures and vegetation covering) -Implementation of terraces improvement (civil structures and vegetation covering)	Sheet erosion at farmers' lands becomes decreased.	Terraces are maintained well in the area of 33 ha of 120 farmers' properties.	Tanggung Mandan Jelog Cobor		X				Community and related agencies
4. Limited finacial capacity of people for conservation works	Build a cooperation among related parties to control erosion/conservation	-Focused Group Discussion among institutions in the villages -Coordination among the existing groups and related agencies -Request application for financial supports for conservation	Financial issues for village conservation needs have been overcome/supported	Involvement of other parties for financial supporting have been developed	Tanggung Mandan Jelog Cobor		X				Community Local Governmenta nd related agencies
5. Water preservation become lowering	Regreening	-Focused Group Discussion among institutions in the importance of regreening -Area mapping for regreening necessities -Implementation of regreening	Regreening in the village forest has been implemented	Increasing of amount of trees	Tanggung Mandan Jelog Cobor			X			Community and related agencies
	Arrangement of cropping pattern	-Discussion among farmers' groups -Defining the best cropping pattern	Well arranged cropping pattern has been done to preserve water/water conservation	There are 2,642 farmers in the sub villages have improved their land management	Tanggung Mandan Jelog Cobor			X			Community
6. Limited knowledge of people in erosion control aspect	Elucidation / guidance	-Coordination among the existing farmer's group -Identify the conservation issues, which need knowledge building -Contact and develop cooperation and coordination for knowledge building -Implementation of elucidation	Farmers in the community understand more on the conservation.	2,642 farmers develop their capability for improvement of land management	Tanggung Mandan Jelog Cobor				X		Community Local Government and related agencies
	Conservation basic training	-Identify the conservation issues, which need basic training -Coordination among related agencies -Implementation of basic training	Conservation technique capability of people are improved	Land management and conservation by farmers as the owner have been done well, according to the conservation technique	Tanggung Mandan Jelog Cobor				X		Community Local Government and related agencies
7. Delivery of seeds do not meet suitable time for regreening	Management improvement of project implementation	-Propose to the project manager to deliver seeds on time	Project management is arranged well	The percentage of crop death decreases	Tanggung Mandan Jelog Cobor				X		Communityan d related agencies
8. Trees cutting are not done properly	Necessary of introduce proper cutting arrangment to the people	-Focused Group Discussion on the importance of proper cutting arrangement to preserve environment -Necessity to prepare cutting regulation	Cutting regulation has been agreed between community and the local Government	There should be arranged "each cuts each plants" to be implemented in every sub village	Tanggung Mandan Jelog Cobor					X	Community and Local Government
9. Land covering with trees and space between trees are not optimally covered village land	More trees should be planted. More crops should be planted in the spac between trees	-Discussion on the design to add the trees plantation -Identify the necessity of trees to be planted -Area mapping to approach the necessity of land covering -Implementation of trees planting	Additional trees planting and more crops in the space between trees are planted for and covering have been done by farmers' self support	The amount of trees and crops between trees have been increased in the area of 26.44 ha of 100 owners	Tanggung Mandan Jelog Cobor					X	Community
10. Planting for river bank protection are not enough	Necessity to introduce community movement on planting for river bank protection	-Focused Group Discussion on the draft of village action plan -Mapping of critical/eroded river bank which need planting protection -Identify suitable plants for planting protection at river bank -Implementation of planting at river bank for protection	All critical/eroded river bank have been planted with suitable planting protection	River bank of 1.3 84 ha has been recovered by planting protection.	Tanggung Mandan Jelog Cobor					X	Community
Village Action Plan of PINGKUK											
1. Dryness (lack of water)	Reforestration of village forest	-Focused Group Discussion with the people on the importance of reforestation -Area mapping to approach the necessity of reforestation -Implementation of reforestation	Reforestation of village forest has been done	The amount of trees increased significantly in village forest	Sribit Pingkuk Jebugan Mloko	X					Community Farmers' Group
2. Vegetation covering is not adequate	Development of trees plantation (Teakwood, Sonokeling)	-Discussion on the plan of trees planting development with the people -Identifying the necessity of suitable trees for vegetation covering -Area mapping to approach the location and the area of development -Implementation of trees plantation development	Suitable trees plantation have been developed by the farmers, which are match with the farmers' requirement	The amount of trees increased significantly such as Teakwood, Sonokeling, in the area of 67.42 ha of 113 farmers.	Sribit Pingkuk Jebugan Mloko	X					Community
3. Many erosion locations	Diversion channel is necessary	-Area mapping to approach the location which need a diversion channel -Identifying the need of diversion channel -Implementation of diversion channel	Erosion rate has been decreased	The area of 67.42 ha with 113 farmers is recovered from erosion problem.	Sribit Pingkuk Jebugan Mloko		X				Community
	Erosion countermeasures by constructing wire net gabion for bank protection	-Discussion on the draft of village action plan with the people -Identifying the location & dimension of bank protection structures -Identifying the necessary amount of structures -Execution of bank protection structures	Erosion rate along the river is decreased	Erosion along the canal in the sub villages has been overcome	Sribit Pingkuk Jebugan Mloko		X				Community and related agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
4. Improper maintenance of terraces, drainage facilities and erosion protection ponds	Terrace improvement	-Discussion on the draft of village action plan with the people -Identifying the location and the area of terraces improvement necessity -Implementation of terraces improvement	Terraces improvement have been done in the eroded area of farmers' lands by farmers' self effort	Terraces in the area of 67.42 ha of 113 farmers' properties are improved	Sribit Pingkuk Jebugan Mloko		X				Community
	Erosion protection ponds	-Discussion on the draft of village action plan with the people -Identifying the necessity of erosion protection ponds at each area -Implementation of ponds at each area	Erosion protection ponds have been done in the farmers' lands by farmers' self effort	Erosion protection ponds in the area of 67.42 ha of 113 farmers' properties are made	Sribit Pingkuk Jebugan Mloko			X			Community
	Improvement of drainage facilities	-Discussion on the improvement of drainage facilities with the people -Area mapping to approach the location, the amount and the dimension of drainage facilities to be improved -Preparation of organization for project implementation -Project implementation	Improvement of drainage facilities have been done in the eroded area of farmers' lands by farmers' self effort	Surface runoff is controlled by the drainage facilities of 120 m length in the area of 10.20 ha of 17 farmers in one sub village	Pingkuk			X			Community
5. Limited capacity and capability of people in trades or entrepreneurship to support conservation activities	Livestocks development (cow and goats)	-Focused Group Discussion on the importance of livestock for conservation activity -Identification of potential and market -Preparation of livestock seeds for development	Capacity and capability improved in live stocks development	Livestock has been developed for 113 farmers in all sub villages	Sribit Pingkuk Jebugan Mloko			X			Community and related agencies
6. Utilization of space between trees are still weak	Herb development	-Identification of potential and market -Preparation of herb farmers groups for herbal development -Implementation of herbal development	Herbal farming in the space between trees by farmers with self effort	Land covering with herbal vegetation in the area of 21.19 ha of 29 farmers in one sub village with self effort	Mloko				X		Community
	Land covering by grasses (kolonjono, gajah, etc)	-Discussion among farmers' groups for grasses development -Area mapping to estimate the area -Identify the requirement of grasses -Implementation of grasses development	Grasses farming in the open space by farmers with self effort		Pingkuk				X		Community
7. Deterioration of state forest	Vegetation covering at contract base	-Focused Group Discussion on the issues of Perhutani's vegetation covering contract base -Coordination among community surrounding the state forest and the related agencies including the local Government in preventing illegal logging	Mutual understanding between the surrounding community, the related agencies and the local Government is developed	Law enforcement against illegal logging in the state forest managed by Perhutani	Pingkuk Mloko					X	Community
8. Low capacity on capital searching and management	Management and empowerment of farmers groups in the village	-Coordination among farmers groups -Identify potency and issues being faced -Improving the related organization structures -Activating the excising groups	The structures of the related organization and their activity have been improved.	The organization function has been optimal.	Sribit Pingkuk Jebugan Mloko					X	Community and related agencies
	Training on capital management and organization	-Coordination among organization board -Mapping on capital management capacity of organizations -Request application for training -Implementation of training	Capacity of organization board on capital management are improved	Training on capital management and organization are managed in all sub villages	Sribit Pingkuk Jebugan Mloko					X	Community and related agencies
Village Action Plan of SEMBUKAN											
1. Limited erosion control structure within eroded/critical area	Improvement or rehabilitation of the existing erosion control structures	-Discussion with the people on the design of improvement or rehabilitation should be made against the damaged structures -Define the location of damaged structures with the people -Define the amount of structures necessary to be improved or rehabilitated or to be added -Construction material preparation -Implementation of construction	Improvement and rehabilitation of erosion control facility have been implemented	Erosion control structures has been rehabilitated and in function	Sembukan Nawangan Bolak	X					Community Local Government and related agencies
	Additional construction for erosion control facilities (drop structures)	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of drop and check dam structures -Preparation of construction materials -Implementation of construction	Erosion has been controlled by check dam and drop structures	Additional construction for erosion control have been implemented & in function (61 units in 8 sub villages)	Bolak, Semo Nawangan, Semukan, Sokorejo, Tekil, Pondok, Pucungan	X					Community Local Government and related agencies
	Additional construction for erosion control facilities (river bank protection structures)	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of river bank protection structures -Preparation of construction materials -Implementation of construction	Erosion rate along the river is decreased	There are additional river bank protection structures of 8 units in 4 sub villages	Pengko,l Bolak, Semo, Nawangan	X					Community Local Government and related agencies
	Additional construction for erosion control facilities (check dam)	-Discussion on the draft of village action plan with the people -Identifying the location and dimension of check dam -Preparation of construction materials -Implementation of construction	Erosion rate along the river is decreased	There are additional check dam of 3 units in 3 sub villages	Sokorejo Gondangsari Sari	X					Community Local Government and related agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
1. Limited erosion control structure within eroded/critical area	Additional construction for erosion control facilities (Drainage facilities)	-Discussion on the draft of village action plan with the people -Identifying the location and amount of drainage facilities -Preparation of construction materials -Implementation of construction	Surface erosion rate in the farmers' is decreased through farmers' self effort	Surface erosion has been controlled by 2 units of drainage facilities in 1 sub village	Nawangan		X				Community
	Erosion countermeasures by additional trees planting	-Focused Group Discussion on the necessity of trees planting -Mapping of area where additional trees planting are necessary -Identify suitable and the amount of plants to be planted -Implementation of planting trees	The amount of trees increase significantly in the farmers' lands	Additional trees planting covers farmers' land of 108.71 ha in 7 sub villages	Pengkol, Bolak Nawangan, Sembukan, Sokorejo, Gondangsari, Tekil		X				Community Local Government and related agencies
	Erosion countermeasures by additional crops in space between trees	-Focused Group Discussion on the necessity of crops planting in space between trees -Mapping of area where additional vegetation covering -Identify suitable and the amount of crops to be planted -Implementation of planting crops/herbs	Surface erosion rate in the farmers' is decreased through farmers' self effort	Vegetation covering in area of 14.3 ha in 2 sub villages	Semo Nawangan		X				Community
2. Forest management within Perhutani competent is not good	Develop cooperation between related agencies/community for the good management of forest in Perhutani's competent	-Focus Group Discussion on the management of forest of Perhutani's with surrounding people -Identify the related parties -Coordination among the existing or related parties	Mutual understanding between the surrounding community and the related parties to manage the forest honestly	Support to community and related parties is obtained for the management of forest within Perhutani's competent	Sembukan Village			X			Community Perhutani Local Government and related agencies
	Improvement of planting management	-Focus Group Discussion on the management of planting in the Perhutani's with surrounding people -Identify the suitable planting management	Planting management has been done well	The suitable planting management meets with conservation requirement	Sembukan Village			X			Community Perhutani
3. Groundwater become lowering	Regreening/reforestration	-Focus Group Discussion on the importance of regreening -Mapping of area where additional planting are necessary -Implementation of planting trees	Regreening has been done in the village as village forest to recharge the groundwater	The amount of trees has been increased in the village forest	Sembukan Village			X			Community
4. Deterioration of terraces	Terrace improvement by involving related parties	-Focus Group Discussion on the condition of terraces and the impact will be affected -Area mapping for identify terraces to be improved -Identify the necessities terraces improvement -Coordination among other related parties -Implementation of terraces improvement	Sheet erosion is decreased by the terrace improvement in the farmers' lands	Cooperation between related parties are built for terraces improvement in area of 118 ha in all sub villages	Bolak Semo Nawangan Sembukan Sokorejo Gondangsari Tekil Sari Pondok Pucunan			X			Community Perhutani and related agencies
5. Groups in the villages are not active	Guidance, participation and empowerement of groups	-Coordination among groups and the related parties -Contacting and involving the related agencies -Empowerment of groups organization	Groups in the villages are in function for project implementation	Groups have been active in all villages	Sembukan Village				X		Community Groups Related agencies
6. Low elucidation /guidance activity	Regreening elucidation/guidance	-Coordination among the existing farmer's group -Identify the conservation issues, which need knowledge building -Coordination with related agencies -Contact and develop cooperation and coordination -for knowledge building -Implementation of elucidation	Increase of community understanding on conservation basic, regreening, etc.	There are 2,313 farmers who improve the composition of trees in their lands	Sembukan Village				X		Community And Related agencies
7. Low market price (not proportional with production cost)	Market price protection by the Government	-Focus Group Discussion among board of the existing groups -Coordination with related agencies/village institution and local government -Proposed standard price of agricultural product and cost lowering	Proportional market price of agricultural product are obtained by the farmers	The existence of policy of government to protect the price of agricultural product to have proportional selling price	Sembukan Village				X		Farmers' groups related agencies and local government
8. Delivery of seeds do not meet suitable time for planting	Management improvement of project implementation and program	-Propose to the project manager to deliver seeds on time	Project management is arranged well	The percentage of crop death decreases	Sembukan Village					X	Farmers' groups Related agencies and local government
9. Limited capital for village trader development/entrepreneurship	Cooperation with third parties are developed to obtain softloan	-Coordination among traders and producer in the village -Identify the capital problem among the traders and the producers -Request application for capital supports for trade development to third parties	Cooperation between the traders/entrepreneurs and third parties are developed	There are 130 traders/entrepreneurs and village has obtained supporting capital	Sembukan Village					X	Producers, traders &related agencies/parties
	Facilitating the process to reach the market is necessary	-Discussion on the problem of marketing and production of small scale industry -Identify and build the market networks	Market networks of small scale industrial product has been built	Market networks reach all location of all village and outside the village	Sembukan Village					X	Producers, traders &related agencies/parties

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
Village Action Plan of GEMAWANG											
1 High threat of disease on soybeans and paddy plants	Overcome through collective planting management for soybeans and paddies farmers	-Coordinate between the existing farmer groups. -Identify the actual and potentials threat on soybeans and paddy plant and their extent. -Collaborate with the pest management and the Government Agriculture Agency. -Implement the pest management in the field by the community and the Government Agencies.	Farmer's capacity is strengthened in handling the pest management on soybeans and paddies plants.	The pest management is adopted collectively by 1,242 farmers in all sub villages.	Desa Gemawang	X					Farmer Group and District Govern Agencies
	Support the plant medicine.	-Discuss following up of pest management on soybeans and paddy disease -Handle support from Agricultural Agency -Manage the collaborative work to handle pest management	Threat on soybeans and paddy plants is reduced by involving relevant stakeholders.	There is collaborative work between stakeholders to handle the pest management by introducing the local wisdom and resources.	Desa Gemawang	X					Farmer Group and District Govern Agencies
2 Many broken structure for controlling the erosion.	Regreening the critical lands.	-Focus Group Discussion about the importance of regreening to control the erosion. -Map the land need covering trees. -Implement the regreening with conservation trees (teak and mahogany)	The community and state forests has been regreened.	- Increased number of standing trees with teak and mahogany in land covering 57.9 ha.	Puh bener, Dungbandung, Ceper, Pucuk Robyong, Sokorejo, Wahyu, Melikan	X					Farmer Group and District Govern Agencies
	Improvement the broken structure for erosion control.	-Discuss the plan to improve the broken structure for erosion control. -Design the number and location of structure need to improve. -Preparing the working group to handle the job. -Handle the material and tools. -Implement the plan.	The broken structure for erosion control has been improved.	Drop structure, small check dam, and river bank protection has been functioned again.	Desa Gemawang	X					Farmer Group and District Govern Agencies
	Controlling erosion in the rivers with river bank protection.	-Refresh the Village Action Plan on soil conservation with the community. -Decide location and size of river bank protection. -Identify local resources to handle the work. -Implement the plan	Erosion velocity is increased along the river side with the permanent river protection.	There are 8 units river bank protection made in 5 sub villages.	Dunguluh Glogok Dungbandung Pelembapang Jlegong		X				Farmer Group and District Govern Agencies
	Erosion Control with Small Gully Plug.	-Discuss the Village Action Plan on Soil Conservation, especially for the involved farmers in the eroded area. -Identify the size and number of the small gully plugs needed. -Handle the material to make based on local resources -Implement the making process.	Erosion is controlled by small gully plug in the village area.	There are 69 units of new small gully plugs in 10 sub villages.	Puh bener, Jlegong, Glogok, Dungbandung, Ceper, Pucuk, Robyong, Sokorejo, Wahyu, Melikan		X				Farmer Group and District Govern Agencies
	Erosion Control with ended holes (rorak).	-FGD with the community whose their land eroded -Map number and location of rorak -Handle material of rorak making. -Implement rorak making in the farmer lands.	Rorak had been made in every land by the community themselves.	There are 25 holes / ha made in the 20.6 Ha by the community in the 2 subvilages.	Dungbandung Ceper		X				Farmer Group and District Govern Agencies
	Controll the erosion through terrace improvement.	-Discuss the Village Action Plan on soil conservation, especially for the involved farmers in the eroded area. -Identify the size, kind, and number of the terraces needed. -Handle the material to make based on local resources. -Coordinate with Field Officer of Forestry Agencies. -Implement the making process	Rill erosion is decreased in the farmer's land	Land of 61.05 ha is safe from rill erosion.	Dunguluh Puhbener Dungbandung Ceper Pelembapang Robyong Sokorejo Wahyu		X				Farmer Group and District Govern Agencies
3 Low involvement the community in the project works.	Improvement community's involvement in the village project's works.	-Consolidate the existing community organizations. -Coordinate with the Village Government to make the MoU mechanism to implement the project jobs and fix stakeholders roles -Involve the village stakeholder and community groups in the planning step of project.	Community participation either male and female is increased in the planning steps at village.	Every project in the village involves the affected group in the each project step since planning until evaluation.	Gemawang Village			X			Farmer Group and Village Goverment
4 High illegal logging in the state forest	Handling the law enforcement	-FGD to make rule of cutting in the state forest with the community participatively. -Decide the sanction to support the ruled agreed. -Implement the rule enforcement and sanction for who doesn't obligate the rule.	The community understands and obeys the rule of cutting.	Wood cutting in the village according to the agreed rule.	Gemawang Vilage			X			Farmer Group and Village Goverment
	Improving the state forest management	-Discuss with the community especially which locates in or around the states forest. -Identify the effect of bad forest management -Formulate the best manner to handle the state forest management with the community.	Forest management according to the conservation principles.	Implemented the with corroboration of PHBM.	Jlegong Glogok Dungbandung				X		The Community
	Improving the information of sustainable forest management.	-Coordinate between the farmer and conservation groups who live in and around the state forest. -Prepare the material, tools, and media of information for the society. -Implement the information of sustainable forest management for the society.	Increased the community's knowledge.	- Increased community's commitment to manage the forest sustains.	Jlegong Glogok Dungbandung				X		Farmer Group and Village Government

	Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
5	Farmer Groups are stagnant	Facilitating the groups.	-Revitalize and coordinate the existing farmer groups in the village. -Reactivate the government field officers in facilitating the existing farmer group. -Strengthen the groups through improving the management and activities	Groups that supporting the project works are functioned.	12 Farmer Groups has regular meeting to handle their activities in soil conservation.	Desa Gemawang				X		Farmer Group and Village Government
6	The seeds delivery from the project is not on time and planting is not good.	Rearrange the seeds distribution according to the planting season.	Coordinate with the Project Officer to deliver the seed according to the planting season at village.	Project management according to the local planting season and condition.	Decreased the percentage of dead seeds caused by the late of planting time.	Desa Gemawang					X	Farmer Group and Village Goverment
7	Poor management of capital for local traders and craftsmen for business development	Handle the capital and management support from many parties.	-Reorganize the local traders and craftsmen (carpenter) -Identify the capital and management problem need to solve and improve. -Propose the capital and management support and training to the other interested parties.	Collaboration between local trader and carpenter had been made with other interested parties	The 196 local traders and carpenter have sustainable business from their capital and management of business.	Desa Gemawang					X	Farmer Group and Village Government, local traders and carpenters
Village Action Plan of BEJI												
1	The land usage is not suitable with the conserving principles.	Increasing the villager;s knowledge and technical capacity to extract the land according to conserving principls.	Campaign and socialize about land sustainability to: -Develop the community's understanding about the land usage and conservation sustainly. -Coach commnity's technical capacity to extract the land according to the conservation principles -Organize the community's potensial to handle the conservation effort collectively. kebersamaan	The land usage according to the conserving principles	The decreased nthe sheet and guy erosion at 21.15 Has in width.	All subuvillages	X					Farmer groups, Village Govern-ment and Related Institutuion.
		Treating the sheet erosion by reforesting	-Discuss and socialize the VAP result, especialy to the affected land owners. -Prepare the plan to reforest from kind of seeds, number, and time to plant, and fund and the authorities. -Implement the plan by reforest the community lands.	The increased of the covered land have been decreasing the gully and sheet erosion	Reforesting has been done at 52.65 Has in width.	All subvillages	X					Farmer groups, Village Govern-ment and Related Institutuion.
		Treating the sheet erosion with SPA (Water Channal)	-Discuss and socialize the VAP result, especialy to the affected land owners. -Prepare the plan to make the water channal from number, location, size and matterial, fund and the authorities neededd. -Implement the plan to make the water channal	Water channal has been made in every famer's eroded lands in self reliance manner.	There are the safe sheet inflows at 28.94 Has in width.	Beji Ngasinan Nggubugan Pandan Bodeh Nglarangan	X					Farmer groups, Village Govern-ment and Related Institution
		Treating the bank erosion with the ditch and stream bank protection	-Discuss and socialize the VAP result, especialy to the affected land owners. -Prepare the plan to make with the ditch and stream bank protection 's location, size and matterial, fund and the authorities neededd. -Implement the plan to make the with the ditch and stream bank protection. .	The decreased erosion along the eroded bank by making the ditch and stream bank protection permanently.	The bank erosion at 0.232 Ha in width is safe from bank erosion.	Ngasinan Pandan Bodeh Ngersik		X				Farmer groups, Village Govern-ment and Related Institution
		Treating the gully erosion with small gully plug.	-Discuss and socialize the VAP result, especialy to the affected land owners. -Prepare the plan to make with the ditch and small gully plug's location, size and matterial, fund and the authorities, time needed. -Implement the plan to make the small guly plug.	It has been made small gully plugs to overcome the guly erosion.	There are 2 samll gully plugs ha been made inthe 2 subvillages.	Nggubugan Nglarangan		X				Farmer groups, Village Govern-ment and Related Institution
2	The low community'a consciousness to sustain the enviroment	Development the Sustainable Community Based Forest Management	Discuss and socialize the VAP result, especialy to the affected land owners about how to conserve the land and other income sources, through: -Coach the manner of harvesting who consider the sustainabiity rincipes. -Prepare other business plan in order the community not just depend on the forest result. -Optimize the usage of under conserving trees with medicinal herbs and food crops. -Motivate the villagers to plant the conserving trees regularly. -Make and implement the Village Logging Rule that agreed together participatively.	- The usage of forest product according to the sustainability principles. - The Village Loging Rule is obeyed by the villagers and traders.	- The decreased of wood loging. - The logged woods are monitored.	All subvillages			X			Farmer groups, Village Govern-ment and Related Institution
3	The unoptimized the physical structure for conservation.	Increasing the conservation efforts intensively.	-Increase the commuity involvement in the development program (from planning, iplementing, and evauating steps) in conservancy. -Assess the community need and experinece in doing the physical structure. -Discuss the local organization role to maintain the program's result.	The conservancy program according to the community's need and empowere them.	The quantity and qualityof physical structure are according to the technical standard and can be maintained by the community.	All subvillages		X				Farmer groups, Village Govern-ment and Related Institution

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
4 The decreased supoport form the Givernment Agencies in tehcnical and managerial assistance (PPL, BPDAS, , PKL).	Increasing the stakeholder role in supportingthe conservation program	-Increase the regular involvement of technical agencies in supoorting the program. -Facilitate the information and communction of farmer and community's problems. -Arrange the common agenda to do together between the commuity and the Technical Field Offiecer of District Government.	- The Government Field Officers can monitor and do the conservation program reularly. - There is transfer of program management from the Officer to the community.	There is routine and regular coordination between the Government Officers and the Farmer Groups in village.	All subvillages			X			Farmer groups, Village Govern-ment and Related Institution
5. The low community income caused by high cost of social ceremonilas, and education.	Increasing the conserving trees agriculture crops to iprove the famer's income.	-Decrease the production cost by minimizing the chemical fertilizer and adding the green one. -Increase the conserving trees by teak, mahoghany, acaccia and cashew nut) at the rainy season. -Hold the technical assistance in business development based local resources in village. -Reactivate the farmer groups and their business plan.	There is an increase in community income to face the highly of social ceremonial and education.	The increasing perfomance of household management in agriculture effort.	All subvillages				X		Farmer groups, Village Govern-ment and Related Institution
6. The low population of conserving trees	Increasing the famer groups's capacity to handle the community forest management.	-Assist the commuity to establish the farmer group as the conserving pioneer, by -Apply the forest result management in sustaint manner. -Create other alternative business to decrease the forest exploitation. -Optimize the land usage in friendly manner enviromentally -Motivate the community to plant and maintain the conserving treest sustaintly.	The increased covering trees from the self relliance of community. The controlled of timbre logging.	The monitored of logged timbres. The village loging rule can be applied. The growed new busines based on community forest result.	All subvillages				X		Farmer groups, Village Govern-ment and Related Institution
7. The increased unemployed villagers	Increase the microbusiness based on sustainable agrilculture system.	- Identify the community need and capacity to develop the sustainable agriculture system Increase the livestock effoert that supporting the conserving program. - Optimize the medicinal herb under the conserving trees. -Create and network the new market for the product sustaintly.	The sustainable agriculture implemented absorp unemployed villagers.	The increased number of workforce to develop the sustainable agriculture and medicinal herb and livestock in the community forest.	All subvillages					X	I Farmer groups, Village Govern-ment and Related Institution
Village Action Plan of HARGOREJO											
1 Low of community's consciousness to conserve the environment sustaintly	Development of land conservation in village	Campaign and socialize about land sustainability to: - Develop the community's understanding about the land usage and conservation sustainly. - Coach commnity's technical capacity to extract the land according to the conservation principles - Organize the community's potensial to handle the conservation effort collectively.	The landuse according to the conservation principles	Decreased sheet erosion of 18 Has at community land.	All subvillages in Hargorejo	X					Community, Related Agencies
	Treat the bank erosion by making the small gully plug.	- Socialize result of Village Action Plan to the villagers, especially to the farmer's eroded lands. - Decide the location, size and form of the small gully plugs. - Prepare the matterial and fund needed to make the small gully plugs. - Implement the plan to make the small gully plugs.	The decreased bank erosion by adopted the stream bank protection along the river permanently.	The bank 0.305 Ha is secure from erosion	Dawuhan Ngrejo Nglorog	X					Community, Related Agencies
	Treat the sheet erosion by reforesting with the conserving trees.	- Socialize result of Village Action Plan to the villagers, especially to the farmer's eroded lands. - Identify the location's width, kind of conserving trees, origin of the trees, and time to do the plan. - Propose to have seed subsidy from the Forestry Agency - Optimize the local seed availability to reforest the sheet-eroded land.	The increased covering trees have decreased the the sheet and bank erosions in this village.	Reforestation had been done to secure 18.00 Has community land from sheet and bank erosion.	All subvillages in Hargorejo	X					Community, Related Agencies
	Treat the sheet erosion by reterracing	- Socialize result of Village Action Plan to the villagers, especially to the farmer's eroded lands. - Identify the location's width, kind of reterracing material and time to do the plan. - Implement the retteracing	Self help reterracing done by the villagers in 1 subvillage.	Reterracing has been applied in Adanya 1 villages covered 18.0 Has in width.	Nglorog	X					Community, Related Agencies
	Handling the sheet erosion by making the drop structure and split water channel.	- Socialize result of Village Action Plan to the villagers, especially to the farmer's eroded lands. - Identify the location's width, kind of water channal and drop structure and time to do the plan. - Prepare the matterial and organize the community's readiness. - Implement the retteracing and making of drop structure.	The drop structure has been made in the farmer's sheed eroded land, so the water flows securely.	The sheet water flowing in secure manner on the community land 14.85Has in width at all village territory.	Dawuham Ngrejo Nglorog	X					Community, Related Agencies

	Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
2	Uncontrol illegal logging	Preparing the forest result management acording to sustainability principles.	-Socialize result of Village Action Plan to the villagers, about the importance of sustainable forest management and to increase the farmer's income through: 1. Formulate to use the forest result according to the sustainability principles. 2. Create the alternative micro business to decrease the timber wood forest exploitation. 3. Increase the under standing trees usage by medicinal herbs. 4. Motivate the villagers to be aware to plant the conserving trees. -Decide the wood cutting rule through village rule that adapted and reliable to do.	The community forest's result management has been appreciating the conserving principle. The rule of timb wood cutting adopted and obeyed the community.	-The decreased wood cutting. -The monitored cutting of community forest timbers.	Semua Dusun		X				Community, Related Agencies
3	Limited capability to manage local organization (PKK, LPM, Kel . Tani, Kel Rt)	Increase human resources and wrok program of local organization.	Activity / Program to increase human resources capability of local staff organization and members, by: -Need identification -Training of Managemen -Increase organization role and function -Formulate activity -Cooperation with other group//Organization	The improved local institution's activities.	Increase of community partisipation utilizing local organization				X			Community, Related Agencies
4	The phisical projects didn't accoording to the villager and field's need.	Reorientation the model of project based on the society need.	- Involve the community in the program cyclus planning, implentation, monitoring and evaluation). - Empower the community's capacity to manage the project. -Transfer the program management from the project officer to the community organizer.	The community receives and feels the project's advantages in feasible quantity and quality.	There is community's motivation to maintain the project result sustaintly.	All subvillages in Hargorejo				X		Community, Related Agencies
5	Lowa attendance of Field Officers (Perhutani, Agriculture and Forestry, Irrigation Agencies) although there is a project	Improve the stakeholder's involvement at post program monitoring	-Reactivate the project implementing group and its activities. -Faciitate the village community's need information to the stakeholders. -Maintain the collaborative work between the village community and the Field Officers.	It has been agreed a common understanding between the villagers and the Government Field Officers to overcome the economic and conservation problems together.	The economic and conservation problems solved by the projects.						X	Community, Related Agencies, Gov. Field Offiers.
Village Action Plan of KULUREJO												
1	The varied and increased extent of eroded land in village	Treating the bank erosion by making the permanent gabion	- Socialize the VAP result, especially the eroded land owners. - Identify the location of the gabion that will be made - Prepare the plan to made the gabion. - Propose to the PBS to help some of the fund needed to overcome the bank erosion. - Prepare the fund and material - Implement the plan involving the farmer groups.	The permanent gabion has been made in the river to overcome the bank erosion in collaborating between the community and the PBS (Bengawan Solo Project).	Bank erosion at 1,189 Has in width are controlled by the gabion.	Ngropoh Sambeng Weru Papringan Tukluk	X					Villagers And Related Agencies (PBS, PJT I, Forestry Agency)
		Traeting the sheet and road side erosion with the reforesting trees and road side protection,	- Socialize the VAP result, especially the eroded land owners. - Identify the location of the agriculture land and the road side - Prepare the plan to made the the seeds to overcome the agriculture land erosion. - Propose to the PBS to help some of the fund needed to overcome the sheet and road side protection. - Prepare the fund and material - Implement the plan involving the farmer groups.	There is community movement to overcome the road side and sheet erosion.	Decreased the sheet erosion at 56.31 Has in width either in state forest and the community one.		X					Villagers and related agencies (PBS, , Forestry Agency)
		Treating the erosion by improving and making the drop structure and water canal.	- Socialize the VAP result, especially the eroded land owners. - Identify the drop structure's condition in each famer lands. - Prepare the plan to made the the seeds to overcome the agriculture land erosion. - Prepare the fund and material and working groups - Implement the plan involving the farmer groups.	Water canal in each farmer lands has been improved in self relliance manner.	The controlled sheet erosion by improved water canal in 56.31 has at community lands.	Bendungan Ngropoh Sambeng Weru Tukluk	X					Farmer Groups, Forestry Agency
		Treating the erosion by improving the existing terraces.	- Socialize the VAP result, especially the eroded land owners - Identify the terrace's width and form that need to improve. - Prepare the plan the working group. - Prepare the fund and material - Implement the plan involving	It has been made and improved the ended hole in the eroded community lands by themselves.	There are new and improved ended hole (ended terrace) at 93.12 Has in width of village area.	All subvillages.	X					Farmer Groups, Agriculture Agency

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
2 The lack function of the Field Officer of Goverment Agencies (PKL and PPL)	Refunctioning the Field Officers of Goverment Agencies to give the technical assistance.	-Make regular coordination among the Government Field Officers to discuss the follow up of VAP. -Follow up the agreement to implement the VAP. -Motivate the community's activities in implementing the VAP. -Give the technical assistance and institutional guidance to the local organization in handling the VAP.	The functioned role of technical agencies's Government Field Officers in giving the technical and institutional guidance vor the villagers.	The Government Technical Agencies's Field Officers are existing in Farmer Group's meeting.	Bendungan Ngropoh Sambeng Weru Papringan Tukluk		X				Farmer Groups, Agriculture Agency , Villagers
3 The inactive and stagnant farmer groups caused by bad loan performance.	Strenthening the farmer groups's capacity in administration and management.	- Identify the existing farmer groups and describe their condition and problems. - Build the farmer groups's capacity in administration and management. - Hold regular planning and evaluation of farmer group's activities.	Refunctioned the existing farmer group in every village.	The management of farmer group's activities and business are running well in 3 of 6 subvillages.	Bendungan Ngropoh Sambeng		X				Farmer Groups, Agriculture Agency , Villagers
4 The increasing cutting rate of community timber.	Build villagers's capacity in human resouce development to handle the sustainable community forest through training and group busines.	Socialize and cammpaign of the sustainable community forest through land conservation by: -Improve the forest result management wisely in sustain manner. -Create the farmer group's alternative business to decrease the forest exploitation. -Handle the self reliance regreening in the community lands. -Create and implement the cutting rule for village stakeholdders and villagers.	The forest result utilization according to conservation and sustainability principles.	The decreased sale of underaged cut woods.	Bendungan Ngropoh Sambeng Weru Papringan Tukluk			X			Farmer Groups, Agriculture and Forestry Agencies , Village Government.
5 The expensive paddy production input	Introduce the Low Input and Sustainable Agriculture (LEISA) system.	-Reactivate the ianactive and stagnant farmer groups through coordination with the related Government Agencies. -Diversify the agriculture commodities. -Use the land in community forest in optimum manner. - Handle the LEISA system by decrease the external input (such as chemical fertilizer, and pesticides, transgenic seeds) that very expensive in prices.	- The decreased production cost -Increased the income from agriculture result.	-Production cost increased 25% than year before. -The diversifi-ed agriculture products. -The decreased high depend-ency on the chemical ferti-lizers and pesticides 25% than a year before. -The more fertilized land in the villages.	Bendungan Ngropoh Sambeng Weru Papringan Tukluk				X		Farmer Groups, Agriculture Agency , Village Government
6 The lack of informatkon and makerting network.	Strengthen the agriculture network of information and marketing.	- Reactivate the farmer groups to form the marketing network for their agriculture product. - Facilitate the farmer groups to utilize the network of market and information.	-The agriculture product made by the farmers can be appreciated by the market with fair product. -The formed strong market network and managed well.	There is information and market network that accessible and controlable by the farmer group in the village and Kecamatan levels.	Bendungan Ngropoh Sambeng Weru Papringan Tukluk					X	Farmer Groups, Agriculture Agency , Village Government
Village Action Plan of PULUTAN KULON											
1 The community consciousness to cope erosion isn't enough	Increasing community capabilities about conservation	Socialization to develop the consciousness and understanding about conservation for stakeholders, using training methode.	-The develop understanding and consciousness on erosion location. -Applied and done by the community	-237 persons understand the erosion problems. -There are conservation efforts.	All sub villages	X					Communities, Related Agency
2 The increased of sheet, bank, gully, and landslide ersions in village.	Reforesting movement.	- Socialization the Village Action Plan on Soil (RKTD) to the community, especially the eroded land owners. - Making the reforesting action plan with the communities. - Doing reforesting movement together.	Inccreased the cveringand conserving trees can controll the sheet, bank, gully, and landslide erosions.	Reforestation has bee done at 143.65 Has in width.	All sub villages	X					
	Controlling erosion with making gabion	-Socialization the Village Action Plan on Soil (RKTD) to the community, especially especially the eroded land owners -Determining the location of gabion with the communities -Making the controlling erosion action plan (by talud/bronjong kawat) -Mobilizing fund and material. - Doing the activites	The gabion had made to control the mountainside erosion	About 0.289 Ha mountainside erosion had controlled by making gabion in all villages	Gunung Cilik Dung pelem Ngaglik Puthuk Gedangrejo Jatirejo	X					Communities, relevant department
	Controlling erosion by making/rebuild SPA	-Socialization the Village Action Plan on Soil Conservation (RKTD) to the community especially the eroded land owners -Identify the spill water channal condition together, and determine the quantity and location the new SP - Doing the action plan on each land.	Drop struture repaired/made if necessary on each farmer's land by self hrlp.	The controlled sheet erosion with the drop structure at 47.75 Has in width	Dung Pe-lem Losari Ngaglik Puthuk Gedangrejo Mojo	X					Communities
	Controlling erosion by making and improving terrace and ended hole (rorak)	- Socialization the Village Action Plan on Soil (RKTD) to the community, especially the eroded land owners. - Redetermine quantity / the wide of terrace and ended hole (rorak) that need repaired - Implementation of repairing.	The making /repairing terraces and ended holes had been done on farmer's land by self supporting	There are a making/repairing of terraces on 143.65 Has in all subvillages.	All sub villages		X				

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
2 The increased of sheet, bank, gully, and landslide ersions in village.	Reforesting to increase forest's function and soil conservation	-Socialization the Village Action Plan on Soil (RKTD) to the community, especially the eroded land owners. -Make action plan and reforesting program with communities -Do reforesting activities, by program or self supporting.	Decrease erosion especially surface and ravine erosion	Reforesting activities had done on 143.65 Ha	All sub villages		X				Communities, relevant department
3 Low quantity of agriculture's product, low price, expensive inputs, dry land	Develop the Sustainable agriculture.	- Reactivate farmer's groups and coordination with related egency - Agriculture's deversification - Maximize the land usage according to the land countour.	Increase the farmer's income	Dereased dependence to the chemical fertilizers. The increased land fertility. Frequency to plan increased by the fulflled water.	All sub villages						Communities
4 Local Institution less function (BPD, LPKK, LPM an d farmer group)	Empowering local intitution role and function	- Develop the local intitution and related agency coordination - Design Village activity program	Local intitution had been function and be able to act the program	Local intitution contribute for communitu development and Village Goverment	All Sub Villages			X			Related Ahency
5 Related Agency(Irrigatio n, farming and forestry) less active	Refunction the Related Agency until the village	- Coordinatie routinely with communities for facilitate the activity, need and problem solving - Support the community action plan on soil conservation (RKTD) to operate.	Related Agency had been function to support and facilitate the community and Village Government needs	The Village d Government and other sakeholder ready to faclitate the problem solvingof village's need and problems.	All Sub Villages				X		Village Instituition, Village Government and Related Agency
6 Farmer Group in sub Villages less active	Reactive the farmer group in sub villages	- Identify the existing farmers groups - Capacity building the instituition - Refunction groups - Routine meeting - Making activity program	All groups in sub villages had been functioning	There are activity to support the group empowerment .	All Sub Villages					X	Communities, Village Government and Related Agency
7 Repairing the means of tranpotation	Repairing the road to iinfuence the transportation	- Make the communal planning to improve the village road accordng to the community's self capacity. - Apply the proposal to the Public Work Agency. -Implement the road improvement.	There is sub villages's road improvement.	4 subvillages tried to improve their road tehirselves.	4 subvillages Ngaglik Puthuk Gedangrejo Mojo						
Village Action Plan of SUKOHARJO											
1. The decreased agriculture result	- Using the land by adopting the con-serving principles in maximum way. - Refunctionate the Small Gully Plug to help irrigating the agricultuere land.	- Reactivate the famer groups in coordination with the Government Agriculture and Forestry Agency. - Diversificate the kind of agricultural plants. - Minimize the barren area. - Improve the broken Small Gully Plug by dredging. - Demonstrate the Low External Input and Sustainbale Agriculture (LEISA) or Organic Agriculture.	- The increased result of agricultural effort. - The decreased agriculture production cost.	-The harvest ing result is increased 75% higher than production cost. -The water need in agriculture land fulfilled. -The decreased to the chemical fertilizer and perticide decreased. -The more fertilized land.	All subvillages	X					Instansi terkait
2. The stagnant of Village Institutions to handle regular meetings to make a decision.	Increase the local institution's role function and capacities.	- Reactivate the local institution to have the annual planning in coordinative manner. - Implement the plan invoilving the village stakeholder and villagers.	The local institutions do their annual plan in village by cooperating to share information, doing the coordination inetgratedly.	The villagers have real participation in overcoming the villages problem include the erosion ones, so does the Village Institution.	All subvillages		X				-Masyarakat -Lembaga Desa - Pemdes
3 The low quality of household's small industrial products	Increasing the quality of household's small industrial products	- Identify the cause and solution of microbusiness product quality. - Training of how to increase the product quality in household small industries. - Implement the training result in improving the product quality. - Follow it by maintaining the product quality sustainly.	-The identified critical problem in microbusiness and their solution chosed. -The Increased technical and managerial skill villager's microbusiness -The increased productg quality	-The 50% of the microbusiness actors are increasing their capacity to increase the product quality. -Increase of capital of business is 25%.	All subvillages		X				Masyarakat dan instansi terkait
4. The high number and kind of eroded locations by the low capacity of human resources to handle	Increase the farmer's knowledge about agriculture effort that according to the conserving principles.	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Follow the discussion result by coodinating with the stakeholders to handle the villager's agenda of soil conservation.	-The growing group's consciousness in adopting the conservation principle at teh land extraction. -The involvement of Goverment stakeholder in erosion countermeasure.	There are 38,045 Has in width at 12 eroded location managed according to the conserving principles.	All subvillages	X					
	Treat the sheet erosion through the reforesting trees (vegetative countermeasure)	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Decide the location prioritized to overcome, kind of preffered conserving trees choosed and time lines to plant together. - Implement the plan and looking for other support of seed from Forestry Agency or self reliance seeds.	There are the covering trees to increase the sheet erosion and gully ones.	It has been planted the teak, mahoghany, and medicinal herbs at 38,045 Has in width.	All subvillages	X					Masyarakat Dinas terkait

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
4. The high number and kind of eroded locations by the low capacity of human resources to handle	Treat the bank erosion by making the ditch (SPA)	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Decide the location and size prioritized to overcome, and kind of preffered ditcheschosen and time lines to build together. - Prepare the matterial and constructing team. - Implement the plan and looking for other support of fund or matterial from the Forestry Agency or self reliance matterial.	- The farmers made the ditchesto controll the sheet erosion. - The ditches are effective to control the bank erosion.	The controlled sheet erosion at 14.50 Has in width by the built of ditches in every farmer's lands at two villages.	Bon Agung Pule	X					
	Treating the bank erosion by making the gabion	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Decide the location prioritized to overcome, size, and kind of preffered gabion choosed and time lines to build together. - Prepare the matterial and constructing team. - Implement the plan and looking for other support of fund or matterial from the Forestry Agency or self reliance matterial.	It has been made a gabion by self relliance or supported by the Government program to control the bank erosion.	The bank erosion at 0.335 Ha in width has been controlled.	Blaraksari Sukoharjo Dalan Gede Sendangsa ri Tulakan Bon Agung	X					Masyarakat Instansi terkait
	Treating the bank erosion by river normalization.	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Identify the river's location, size, form, and design or normalization needed to: - Reorientate the river flow. - Make the gabion in urgent location. - Prepare the matterial fund and worker team. - Implement the plan made.	The river normalization has been done by reorientating the river flow and making a set gabion.	The bank erosion at 0.27 Ha had been controlled. There no flood in agriculture area.	Jati		X				Masyarakat Instansi terkait
5 The low quality of household product make the low demand	Increasing the household's small industrial product quality	- Identify the cause and solution of microbusiness's product quality. - Training of how to increase the product quality in household small industries. - Implement the training result in improving the product quality. - Follow it by maintaining the product quality sustainly.	The increased product's quality made by the household.	The improved quality followed up by the increased deman of household 's product .	Blaraksari Sukoharjo Dalan Gede Sendangsa ri Tulakan Bon Agung		X				Masyarakat dan instansi terkait
6. The decreased water supply and soil fertility caused by high frequency of wood logging.	Pengelolaan lahan dan pemanfaatan hasil hutan berbasisi kelestarian	- Promote the importance of sustainable forest management as the source of : water, wood, income supplies . - Manage the community and stae forests by adopting the conservation principles. - Develop the economic effort as alternative to decrease the state forest logging. - Reforest with the conservation trees and supported by the Village Rule of Trees Cutting.	- The forest result management has been according to the conservation principles. - The applied Villae Rule of Trees Cutting.	- The decreased trees cutting in under feasible age and middleline - The monitored trees cutting and wood distribution.	Blaraksari Sukoharjo Dalan Gede Sendangsa ri Tulakan Bon Agung			X			Masyarakat dan instansi terkait
7. The less advanced household's business management	Improve the household's business management	- Identify the crucial problem of household's business management - Assist the administrative and market penetration - Training to increase household business's capacity in creating new product, quality controll, create and maintain the market.	The household business becomes the additonal source of income.	45 household businesses improved in their management	All subvillages				X		Instansi terkait
8. The low communication between the communities and Government Field Officers	Revitalizing the Village Institution and Government Field Officers (Perhutani, Agriculture and Forestry Agencies, BP DAS) until the village level.	Increase the consultative and coordinative of stakeholder forum to : 1. share information among the stakeholder and communities. 2. technical assistance 3. involve the community in the cyclus of village development .	The villagers has active initiative to contact the Government Field Officers	The farmer groups have annual plan that need to collaborate with the Field Officers. The Field Officers attend regularly to the farmer gfroup meetings.	All subvillages					X	Instansi terkait
9. The losed agriculture lands owned by the 30 family unit that lieve along side of river.	Treating the bank erosion by river normalization	- Discuss the VAP result with the villagers especially who has eroded lands about the solution of high erosion number in village. - Identify the river's location, size, form, and design or normalization needed to: 1. Reorientate the river flow. 2. Make the gabion in urgent location. - Prepare the material, fund and work team. - Implement the plan made	The river normalization has been done by reorientating the river flow and making a set gabion.	1.5 km eroded bank at river has been normalized by the adopted gabion.	All subvillages					X	

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
Village Action Plan of PAKISBARU											
1. Limmitedness of farmer's knowledge , skill and refference of conserving and agribusiness	Develop the farmer's home industri and agribusiness based on conservancy	Identify and asses farmer's need to increase the small business and agrobusiness through human resource development in case of: - Production management - Quality controll - Product Design - Marketing Mix	Increased Farmer's capacity to handle the small business and agribnusiness that supported by the good marketing.	The household' s product marketed well through local network 4 subvillages.	All subvillages	X					Farmer, traders, and related institution
2. Land Use unsuitable with the land countour	Improvement the community's the importance of land conservancy	Socialize the importance, technique of land conservancy to coach about how : - Build the understanding to use the land according to the countur and their conserving trees sustaintly. - Prepare the plan to use and extract the land according to the conservancy principles. - Organize the group potential to overcome the erosion problem togteher.	Landuse according to the consrvation principles.	Decreased the sheet erosion problem at 29,83 Has in width.	All subvillages	X					Farmer groups Forestry Agency
	Treating the sheet erosion with the resforesting by conserving trees.	-Socialize the VAP result, especially the eroded land owners. -Decide the eroded land need to reforest in width amd the owner. -Prepare the plan to reforest (kind of trees, number team, time to plan). -Propose the Government's subsidy in seed for conserving trees. -Prepare the self reliant nursery. - Implement the plan supported by the village nursery and Government program.	Decreased the sheet and guilly erosion.	Reforestation has been done at 29,83 Has in width with the conserving trees (teak, mahoghany, accacia)	Semua Dusun	X					Villagers and Related Agencies Farmer Groups, traders, and related institution
	Treating the sheet erosion by reterracing	-Socialize the VAP result, especially the eroded land owners. - Decide the terrace length need to build and improve. -Prepare the material and exececutive team to organize the farmer group. - Implement the plan in each farmer groups.	Sheet erosion can be controlled by the good reterracing.	The sheet water inflow are not eroded the top soil in 28.94 Ha in the eroded location at village.	Tempel Menur Krajan Katosan	X					Villagers and Related Agencies
	Treating the bank erosion by refunctioning the small gully plug.	-Socialize the VAP result, especially the eroded land owners. - Review the last agreement about the existing checkdam stakeholder's right and obligation, and consquences if the checkdam was full. -Identify checkdam conditione and improvement need. -Plan the treatment in checkdam: 1. Checkdam Clearing / Dredging 2. Improve other broken conserving structure. -Prepare the material and fund needed. - Implement the plan coordinated by each farmer groups.	8 Chekdam cpuld be reused to controll the erosion and to supply the water irrigation in the agricultural lands.	The bank erosion in 4 subvillages could be overcomed. The increased paddi field irrigated by the checkdam water splies	Ngasinan Pandan Bodeh Ngersik			X			Villagers and Related Agencies
3. The limmitedness of transportation means and vehicles	Improving the village street	Improve the province, v illage, and subvillage roads to influnce the thing, human and service flows.	The fluency of the thing, human and service flows supported byu the District Government	There is road project from the Government, and self relliance effort from the community to improve the subvillage street.	Menur, Tempel Sub Villages.				X		Villagers and Related Agencies
4. The unballanced agricultural output's price and the input's one	- Proposing to the Government subsidy for farmer in agriculture realm. -Developing the medicinal herbs to use the undertrees productive soil.	-Identify the farmer need of business development. -Promote the selling price of agricultural product by strengthening the farmer group. -Decrease the productive budget by using the organic fertilizer and self reliance seedling. -Increase the selling price through the quality improvement and refunctioned the farmer group.	The Government subsidy supported by protection of farmer's result. The farmer group and local traders have standard price of agriculture products.	The increased farmer's income from the controlled agricultural product trading.	All sub villages					X	Villagers and Related Agencies , Farmer, traders.
Village Action Plan of PIJIHARJO											
1 Many surface erosion, sloping riverbank, gorge and landslide	Conservation development program by empowerment and sustainability perspective	Socialization the importance of soil konservation expcialiy for erosion land owner	Communities be able process their land by coservation standard	Erosion can be restrained until 78.91 Ha	All sub villages	X					Communities and Related Department
	Regreening	- Socialization te Village Action Plan on Soil Conservation (RKTD) expecialy erosion land owner - Plan the regreening -Doing the regreening by self-supporting and government project	Surface erosion and gorge had been less	Regreening on 78.91 Ha	All sub villages	X					Communities and Related Department
	Repairing and making the SPA	-Socialization te Village Action Plan on Soil Conservation (RKTD) expecialy erosion land owner -Identify SPA condition and decide the location and kind of SPA -Doing making the SPA in self land	Farmer's land had good SPA by self-supports	Surface erosion restrained	Bendungan, Gayam, Ngembes, Pengkol, Sampak, Demangan, Jurang	X					Communities

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
1 Many surface erosion, sloping riverbank, gorge and landslide	Making the gabion	-Socialization te Village Action Plan on Soil Conservation (RKTD) expecialy erosion land owner -Plan the activity to make gabion -Deciding the location for make gabion participatively -Preparing the material and money -Doing making the gabion	The gabion hade been made	Sloping riverbank erosion restrained at 1.017 Ha	Bendungan, Ngembes, Sampak, Demangan, Pengkol, Platar	X					Communities and Related Agency
2 The decreasing source of water for household	Repairing the water building (SGP)	-Idetify water building condition of unfunction -Plan to make the SGP can be functio and order to use and nurse -Preparing the material and money -Doing activity to repairing the SGP	SGP had been repaired	Waters need for irrigation and drink had been fullfilled	All sub villages		X				Communities and Related Agency
	Resource water nurse	-Identify the resource water -Build communities mativation to nurse function of forest as water buffer -Making the order to use water resources	Resource waters need had been fullfilled				X				
3 Community has less conciousness to conservatuin	Increasing human resources about conservation	- Training for build conservation conciousness and knowledge - Doing conservation activities	- Community had been knows and aware abaot conservation - Communities do conservation implementation	Consevation efforts	All sub villages		X				Communities and Related Agency
4 Village Institution less support to coservation (LPM, BPD< LPKK ab village government)	Increasing local institution and village government of role and function	-Coordination the local intitution and related agencies to refunction and institutin study -Design activity and implementation empowerment program -Coordination, informatin and financial support	Local instituion actives to support the governace program on coorperation, information, coordination and financial)	Communities had been actives by local institution and cillage government supports	All sub villages		X				Communities, local institution and village goverment
5 Farmers group underdevelop	Reactive the farmers groups	- Identify farmers groups - Strngtening institution - Refunction intitution - Routine meeting and make program	Farmers groups had been functin in sub villages	Same activities groups strengthening program	Ngembong, Nglangkir, Ngepek, Gayam, Bendungan, Jurang, Pijiharjo			X			Related Agency
6 Sub villages, villages an sub district had broke	Repairing the roads	-Plan to make new roads by priority for self-support or subsidy -Propose, preparing financial and material - Doing activity	Some reparing roads in sub villages as priority	Transportation access more qiuck and cheap	Jurang				X		Related Agency
7 Farmer of less income	·maximaize land use ·Refungctin SGP	- Reactives farmers groupto always elated agencies coordinate - Deffersification agricultue product - Maximize land use - Repairing build SGP - Socialization organic agriculture	- Income agreiculter sector had been increase - Production cost less	-Harvest had been increase -Irrigation need had been fullfilled -Less depend on chemical fertilizer - Land had been more fertile	All sub villages					X	Related Agency
Village Action Plan of BELIKURIP											
1. The Checkdam unfunctioned	Improving and maintananing of checkdam	-Socialization the Village Action Plan on Soil Conservation (RKTD) to the community around the checkdam. -Identify the breakage extent of checkdam -Material handling for checkdam improvement -Checkdam dredging communally -Increasing the splitway of water -Doing the checkdam improvement	The checkdam functioned again supported by community self reliance in finance at 50%.	One Checkdam has been functioned again and managed by one sub village community.	Tanjung	X					Village Government and Related Agencies
2. The State Forest the Community nes has no trees	Improving the Community Forest Management	-Socialization the importance of sustainable community forest management. -Deciding the kind and sum of seedling for reboization participatively. -Collaborating with Forestry Agency to find the seeds/ buds for village conservation. -Making Village Seedling -Doing the reboization planting in community forest.	The importance of sustainable forst management could be adopted by the community and folloed up through reboization.	Number of standing trees increased according to technical standard/ ha	All subvillages in Belikurip Village	X					Farmer Group, GNRH Groups, Village Government
	Improvement the broken State Forest	-Improving the concept and implementation of Community Based Forest Management (PHBM) to the community arround the state forest -Handling the coordinative meeting between the Perhutani and the Community to decide the rule of the game in PHBM. -Collaborating with Forestry Agency to find the seeds/ buds for village conservation. -Doing the reboization planting in community forest - Law enforcement for the State Forest's Officers and involving the community in forest security according to the going Law. -Creating the local job opportuitis by utilizing local resiurces such as lime firing and diging the river stones.	The rule of game understood together between the Perhutani and Community in managing the sustainable forest management	The state forest managed according to the decided rule made together between the Officers and villagers.	The State Forest in Belikurip Village	X					Perhutani, Village Government and Community.

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
3. The decreasing source of water	Making the absorbing sources	- Design the location and size of absorbing sources participatively - Preparing the material - Doing the making of absorbing sources	The absorbing sources had been made and functioned well by the community.	It hade been made 5 absorbing sources, one in a sub village and managed by the villagers.	Klerong, Tanjung, Banyuripan, Melikan, Soko,		X				Farmer Group, GNRH Groups, Village Government
	Regreening the critical land	- Decide kind and number of regreening tress. - Coordinate with the District Government to help t he seedling/buds handling - Preparing the self reliance seedling - Plan the regreening trees.	Increased land coverage with trees by the community around the water sources.	The community land covered on 18.574 Has and around 8 water sources (Gayam, Delem, Punuk, Klayu, Sendang, Obalan, Gayam, Soko sub villages) had been planted with the conservation trees according to the technical standar 425 trees/ ha.	Klerong ** Banyuripan Melikan * Soko * Tanjung *** Jamprit kln*		X				
4. Low level of community's livelihood.	Increasing the community's livelihood extent	-Identify community's local resources. -Propose the carpenting tool to help villagers in diging the sand in rivers. -Handle the technical training to extract the forest result susintly especially -Promoting the village's wood product and sand to the district market.	The increased community's liveliood level by utilizing the village resources.	-The community has new sources of income -There are new carpenter who extracting the forest wood -There is market network what absorb the village wood product and sand.	All sub villages in Belikurip village.		X				Farmer Group, GNRH Groups, Village Government
5. The low consciousness to group	Revitalizing the existing groups and accompanied by the relevant Government Aagencies.	- Identify and analyse the existing farmers groups. - Arranging the group's activities according to their needs. - Revitalize the Government Field Officers to accompany the farmers meeting and activities. pendampingan kelompok	The farmer groups are active in their meeting and activities regularly.	-The Government Field fficers are roling actively in accompanying the groups. -The group's routine meeting is effective for conservation and economic discussion.	All sub villages in Belikurip village.			X			Farmer Group, GNRH Groups, Village Government , NGO
6. The community doesn't consent to maintain and conserve the land soil	Learning and training of conservation	- Socialization the Village Action Plan on Soil Conservation (RKTD) to the community - Training on soil conservation by the Government Agencies (Agriculture and Forestry) - Soil Management according to conservation technical standard.	The community understands and adopts the conservation technical principle in soil management.	-Terracing adopted on the sloppy lands. -There are slopping grassing in terrace -Spillways are managed well in farmer's lands.	All sub villages in Belikurip village.			X			Farmer Group, GNRH Groups, Village Government , NGO
7. Government Field Officers from Agriculture, Forestry) and Village Technical Assistant are not active to field	Developing the collaboration between Field Officers and Village Technical Assistant	- Arranging corraborative activities done together between the community and the Officers - Making the corraborative monitoring and coordination between the Field Officers and the farmer and conservation groups. - Revitalizing the Village Representative Board (BPD) in handling the soil conservation issues organisatorily.	There are corraborative works between the Village Government and District Agencies in solving the economic ans soil conservation problems.	-The Government Field fficers accompany the villagers in solving the village economic and soil conservation problem -There are activities needed to accompany by the Field Officers -Village Representative Board are active in handling the soil conservation problem in the community.	All sub villages in Belikurip village.				X		Farmer Group, GNRH Groups, Village Government, NGO
8. Decreasing soil fertility	Introducing the sustainable agriculture and their market network.	- Socialization the importance of organic /sustainable agriculture system. - Identify the interested farmers groups - Develop the sustainable agriculture in village. -Relate to green market for sustainable agriculture product to find the premium price.	The organic farming result could be sold in the market with the premium price.	- There is local trader who absorbs the organic product and buying them with the premium price.	All sub villages in Belikurip village. Semua						Farmer Group, GNRH Groups, Village Government , NGO
	Learning and facilitating the implementation of sustainable agriculture system.	- Socialization the importance of organic /sustainable agriculture system. - Propose toDistrict Giverment to facilitate the implementatation of organic farming at village. -Implementing the organic farming system to support the soil conservation for villagers.	The community could adopt the organic farming in their land sustaintly.	The decrease of chemical pesticide and fertilizer in agricultur Al effort (30% than before)	All sub village in Belikurip Village					X	
Village Action Plan of NGANCAR											
1 The decreasing source of water	Making the adequate absorbing source of water	- Identify the absorbing source's location and size and number need to make in participative manner. - Prepare the material - Implement the making of absorbing sources	The absorbing sources had been made and well functioned by the community	-An absorbing source had been made in subvillages and well managed by the community. -Availability of household water need. - The community didn't spend money to buy water when dry season.	All subvillages in Ngancar						Village Government and Related Agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
1 The decreasing source of water	Increasing the number of conserving trees around the sources water	- Identify the absorbing source's location and size and number of trees need to increase in participative manner. - Prepare the preffered and suitable conserving trees around the source of water. - Implement the plantation of conserving trees around the absorbing sources.	The reboization trees had been planted and well maintained.	- Increased number of standing trees around the 4 source water (Pletes, Petir, Glonggong,dan Tapan) - There is no dry source when dry season.	Petir * Glonggong ** Tapan * * : Sumber						
2 The Community Forest often burned-out	Improving the Community Forest management	- Socialization the importance of sustainable community forest management by more effectively - Prepare the rule of cutting and land clearing. - Implement the rule and sanction for the disobeyed people to this. - Regreening the burned forest in the community land.	- Community Forest managed in effective and sustainbale manner. - The rule and sanction enforced effectively	- Decreased burning event in the community forest. - Number trees on community forest had been appropriate for soil conservation standard (425 trees/ha)	All subvillages in Ngancar						Village Government and Related Agencies
3 The main road eroded seriously	Making drainage ditch at the side of the road	- Socialization village action plan on soil conservation - Decide location and size of drainage ditch - Prepare the material - Do the making of drainage ditch	- The water inflow in the main road coming into the road side ditch - Decreased road side erosion.	The water inflow into the road ditche and not destruct the road.	All subvillages in Ngancar						Village Government and Related Agencies
	Making concrete road	- Decide location and size concrete road with community - Prepparing the material needed - Implement the making of concrete road		Decreased road side erosion and less holed main road along 4 kms.							
4 The high death of Jatimas Seedling	Procurement seedling by forestry standard	Propose to rehabilitate procurement seedling to forestry standard	The super teak seeds are suitable to the technical standard in local condition.	The excellent seed of teak are growing well at 2 subvillages							Village Government and Related Agencies
5 BPD did not know about the role and function's	BPD have role by active	Propose to Government Village and Relevant Agencies to BPDs (Village Representativer Board) to have job training and capacity building	All the Village Representative Board's members able to do their duties and function.	Village Representative Board's members are ready to response the actual problem and formulate the solution togther with the villagers.	All subvillages in Ngancar						Village Government and Related Agencies
6 Low level of community's economy income	Increasing the community's economy income	Propose soft loan for livestock capital for villager's economic development	Farmers have soft loan to livestock capital to increase their income, availability of organic fertilizer, and to absorb the green grass from the terrace.	- The developing livestock effort managed by farmer groups in 6 villages with 10 cows/group. - Ada tambahan penghasilan dari usaha ternak	All subvillages in Ngancar						Village Government and Related Agencies
7. The food severity happens each year	Development the Village Food Safety Net (lumbung desa)	- Workshop on the importance, mechanism and managemnent of Village Food Safety. - Prepare the location and their type of building and access. - Collect the rice by day to day picking up (called jimpitan).	The rice picking up runs well and managed by the community themselves.	Village Food Safety Net managed by each subvillage and supervised by the Village Government.	All subvillages in Ngancar			X			Village Government and Related Agencies
8. The less effort capital of Family Wealth Empowerment Institution and Farmer Groups	Increase the business capital for the the Women and Farmers Groups	Propose to find the soft loan from other parties such as District Government) to strengthen the business successfully.	There is soft loan for business managed by the women groups and for ghe farmer group to support the organic agriculture.	The institutions have business plan and new profit from the business done.	All subvillages in Ngancar			X			Village Government and Related Agencies v
9. The increased -eroded river bank anywhere	Handling the river bank erosion by making the stream bank protection	- Discuss the result of Village Action Plan , especially to the land owner who their land affected by the erosion process. - Identify the stream bank protection's location, size, and the working team. - Prepare the stream bank protection (gabion) - Implement the plan to make the stream bank protection.	It has been made the stream bank protection according to the plan made and can be functioned well by the villagers.	- The stream bank protection well managed by the villagers in 5 subvillages - There are 1.150 Ha of community land in 5 subvillages safe from river bank erosion.	Karangasem Dung Bendo Jetis Petir Glonggong			X			Village Government and Related Agencies
10. The bad quality of feritilizer from the National Movement on Land and Forest Rehabilitation	Handling the fertilizer according to the standardized by the Forestry Department	- Prepare to the project authorities to replace the low fertilizer with the standardized one. - Handle a training to develop the organic fertilizer based on local resources (agricultural garbage and livestock's waste)	- The availability of fertilizer need by substitute with the standardized fertilizer. - The increased community's capacity to prepare the organic fertilizer need for their agriculture effort.	- The standardized fertilizer distributed into 2 subvillages dusun - The both villages's communities are able to make organic fertilizer based on local resources.	Ngancar Glonggong				X		Village Government and Related Agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
11. The broken State Forest by the illegal logging.	Introducing the Community Based Forest Management	-Socialize the result of Village Action Plan on Soil Conservation to the villagers. -Facilitate the making of agreement betwen the farmer groups and Perhutani. -Implement the profit sharing with the proportion 60 for Perhutan and 40% the farmer groups. -Maintain the State forest security -Implement the local sanction for disobeyed people to the rule of the State forest law.	There is Momorandum of Undertanding between the villagers and Perhutani.	- There is no illegal logging - The State forest management adopt the principle of land conservancy	Nawangan Kidul				X		Village Government and Related Agencies , and Perhutani
12. The unfunctioned Checkdam	Otimize the checkdam function	-Socialize the result of Village Action Plan on Soil Conservation to the villagers. -Identify the unfunctioned Checkdam's location and size and number in participative manner. -Prepare the preffered and suitable conserving trees around the source of water. -The chedam clearing by digging manually.	- The Checkdam in village is able to function again by self relliance work (50% of the budget is from the workforce)	- 1 checkdam well managed by the Sigak Villager. - The community land 0.621 Ha e checkdam	Jetis				X		Village Government and Related Agencies
	Making an additional checkdam	-Identify discuss about the need of new Checkdam's location and size and number in participative manner. -Prepare the matterial to build. - Organize the villager to build a new checkdam. -Implement the plan to build a new checkdam. -Maintain the checkdam function.	-It has been made new small checkdam to overcome the erosion that happen in every subvillages, - The new check dam can be functioned and managed well by the community.	There are a new checkdam in a village managed by the villager well.	All subvillages in Ngancar				X		Village Government and Related Agencies
13. The Field Staff from NGO of GNRHL and District Field Government fficer PPL dan PKL just come when there is a project.	Initiating the cooperation between the Village Institutions , Government Field Officers, and Non Government Organization	-Propose the regular coordination between the NG Field Staff and Government Field Officers to assist the farmer group in solving their economic and conservational problems intensively. -Implement the coordination meeting to evaluate the performance of the agreement.	There is common agreement between the Village Government and NG who assist the GNRHL or other and Government Field Officers n solving the village's problems.	The Field Staff/Officer from NGO or District Government assist the farmer group in solving the economic, social and conservational problems in village.	All subvillages in Ngancar					X	Village Government and Related Agencies
14. The broken of alley cropping farmer groups.	Revitalizing the alley cropping farmer group.	-Identify and assess the broken farmer group. -Facilitate the group's action plan that combined the economic, institutional and conservational issues. -Strengthen the group's business plan, management job, and involvment of the members in creating the market.	The alley cropping farmer group countermeasure the erosion problem at the community land.	-The regular meeting farmer group runs well. -The member attendance in farmer group achieves 80 % of the total.	All subvillages in Ngancar					X	Village Government and Related Agencies
Village Action Plan of NGANDONG											
1. The high erosion extent in the community land	Handling the erosion with drop structure	- Identify the water channal's location and size. - Prepare matterial for cannal 's - Impement to build the water cannal.	The decreased bank erosion along the river by making he water channal.	The river bank in 4,775 Has at 7 subvillages are safe from erosion by making the water channal.	Sidowayah Wetan , Sidowayah kulon, Sidorejo, Mlaran, Petung, Karang tengah, Tawang	X					Villagers, Village Government and Forestry Agency.
	Handling the erosion with the gabion.	- Identify the gabion's location and size. - Prepare matterial for gabion structure building. - Impement to build the gabion structure	The decreased land sliding erosion velocity in the community land by making the gabion.	The decreased velocity of land sliding erosion at 0,516 Ha in community land and 9.868 Has by making the gabion in 5 subvillages.	Sidowayah Wetan , Ngandong, Waru, Jebeg, Tawang	X					Villagers, Village Government and Forestry Agency.
	Handling the land sliding erosion by making the drop structure.	- Identify the drop structure's location and size. - Prepare matterial for the drop structure's - Impement to build the drop	The decreased land sliding erosion velocity in the community land by making the drop structure.	The decreased velocityof land sliding erosion at 0,516 Ha in the community land and affected by the gully erosion 9.868 Has by making the gabion 5 subvillages.	Sidowayah Wetan , Ngandong, Waru, Jebeg, Tawang	X					Villagers, Village Government and Forestry Agency.
	Handling the erosion by making the ended terrace	- Dentify the ended terrace's location and size. - Prepare matterial for the ended terrace - Impement to build the ended terrace	Rorak has been made by the commnity in self relliance manner.	- The community land 44,146 ha in width at 9 subvillages are safe from sheet erosion.	Sidowayah WWetan , Sidowayah kulon, Sidorejo, Ngandong, Kebon pakel, Petung, Karang tengah, waru, Tawang	X					Villagers, Village Government and Forestry Agency.

	Development of multipurpose trees.	-Identify the location for development. -Propose the subsidy of multipurpose trees to the Forestry and Agriculture Agencies. -Prepare the self reliance in handling the seeds needed such as gnetum gnemon, manggoes, cashew nut by the villagers. -Plant the multipurpose trees at the farmer lands.	It has been planted the Gnetum gnemon, manggoes, and other multipurpose trees in the community land	Lahan masing-masing masyarakat di 9 dusun seluas 44,146 Ha aman dari erosi permukaan	Sidowayah Wetan , Sidowayah kulon, Sidorejo, Ngandong, Kebon pakel, Petung, Karang tengah, waru, Tawang	X					Village Government and Forestry Agency.
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**Years 1**	**2**	**3**	**4**	**5**	**Authorities**
1. The high erosion extent in the community land	Handling the erosion with the conserving trees teak, mahaghony)	-Identify the location for conserving trees. -Decide the kin, number and delivery of conserving trees. -Propose the subsidy of conserving trees to the Forestry Agencies. -Prepare the self reliance in handling the seeds needed such as teak, mahoghany -Plant the multipurpose trees at the farmer lands.	The conserving trees has been planted in the eroded location.	Increased number of conserving trees with teak and mahoghany and sengon in 44,146 Ha critical land at 9 subvillages.	Sidowayah Wetan , Sidowayah kulon, Sidorejo, Ngandong, Kebon pakel, Petung, Karang tengah, waru, Tawang	X					Village Government and Forestry Agency.
2. The shrinked supply of local watershed	Decresing the accasia trees.	-Hold a village meeting to discuss the cause of water shrinkage and solve the problem. -Decrease the number f accacia population gradually and increasing the conserving trees.	The decreased accacia trees replaced by the conserving trees teak, mahoghany, etc.)	There is a decrease of accasia tree number, i.e one tree/land square/land onwner/ year	All subvillages in Ngandong	X					Village Government and Forestry Agency.
	Increasing the conserving trees.	- Decide the number and kind of conserving trees according to the local condition and preffered by the community. - Propose to have seed subsidy in nature to the Forestry Agency. - Handle a self relliance seeds handling (nursery) - Replanting the conservation trees.	The community planted the conserving trees in the critical land or less coverage of trees, especially around the source of water.	Number of standing trees according to the technical standard 425 trees/ha) planted at the community land covered in 44,146 Has that located around the 6 sources of water(Salam, Ngetuk, Ler Dusun, Resan, Plumpung, Plutungan)	Sidowayah Wetan Sidowayah kln Sidorejo Ngandong * Bon pakel * * Jebeg * Tawang * * Karang tengah, waru Petung * : sumber air	X					Village Government and Forestry Agency.
	Decreasing the chemical fertilizers and increasing the organic one.	-Discuss the disadvantages and advantage usage of chemical and organic fertilizers. - Decrease the usage of chemical fertilizer gradually and increasing the organic fertilizer to recover the missed soil fertilizers.	There is new change in community mind and in the field treatment to decrease the usage of chemical fertilizer.	1packet of chemical fertilizer (50 kg of urea) used just for 0.1 Ha of agricultural land than before adopted to 0.05 Ha	All subvillages in Ngandong	X					Village Government and Forestry Agency.
	Making the water saver with civil technique that planted in the land (embung)	-Decide the water saver with civil technique that planted in the land's location and size parti-cipatively. -Prepare the material -Implement the plan of the water saver with civil technique that planted in the land	There is self relliance effort to make the the water saver with civil technique that planted in the land	The water saver with civil technique that planted in the land can capture the dropped rain water and save them for along time.	Ngandong	X					Village Government and Forestry Agency.
	Increase the rorak (ended hole terrace) in the community land.	- Handle the village meeting to discuss the principle to conserve the land, and the usefulness of the rorak - Implement to make the rorak in the community land.	The principle of land conserving understood and adapted in the community land by the villagers by making the rorak in self relliance manner.	Rorak has been developed at 9 subvillages cover 44.146 ha to absorp the sheet erosion.	Sidowayah Wetan, Sidowayah kulon, Sidorejo, Ngandong, Kebon pakel, Petung, Karang Tengah, waru, Tawang	X					Village Government and Forestry Agency.
3. The decresed of soil fertility	Recover the soil fertility by reintroduce the usage of organic fertilizer	- Propose to the Agriculture Agency to assist the manner of organic fertilizer preparation. - Handle the practice of organic fertilizer making and ti implement in the community land.	There are regular assistance from he Government Field Officer to decrease the number of unfertile land , and use of chemical fertilizers gradually.	-There is regular meeting and action with the Government Field Officer to overcome the unfertile soil countermesures. -Decrease the usage of chemical fertilizers. -Increase the organic fertilizers.	All subvillages in Ngandong		X				Village Government and Forestry and Agriculture Agencies.
	Recover the soil fertility by increasing the conserving trees and multipurpose ones.	- Decide the location and kind of conserving trees (teak, gnetum gnemon, accacia, choccolate, nut, manggoes, cabe jamu (medicine herbs) and pete. - Propose the seeds need to the Forestry Agency - Manage the self relliance seedling. - Plant the conserving and multipurpose trees.	It has been planted the conserving and multipurpose trees in the community critical land.	- Number of conserving and multi purpos trees are increasing significantly in 59.305 Has land in width.	All subvillages in Ngandong		X				Village Government and Forestry Agency.

4.. There is no assistance from the Government Field fficers to the Villagers to conserve the environtment	Create the collabortive workshop between the Field Offcers and villagers.	- Identify the conserving groups and discuss the way out to solve the problems faced. - Coordinate between the Village Government and the Field Officer to write down the agenda of assistance. - Implement the agenda of assistance.	The conserving and economic problems solved together by the collabortion between Village Government, Field Officers, and the Villagers.	- The agricultural and Forestry Agencies send their Field Officers to assist the community in conserving activities regulrly. - There are regular meeting between villagers and the Field Officer to evaluate the progress.	Ngandong Village			X			Village Government and Forestry Agency.
5. The broken gabion	Improving the broken gabion	- Identify the gabion's extent of brokenage, number,size and loction participtively. - Prepare the matterial. - Implement the improvement of the gabion by self reliance in the workforce.	The broken gabion has been improved by 50% self relliance finance realized in workforce.	There is 2 gabion improved in 2 subvillages.	Bon pakel Ngandong				X		Village Government and Forestry Agency.
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**Years 1**	**2**	**3**	**4**	**5**	**Authorities**
6. Unfunctioned checkdam	Improving the checkdam	- Identify the checkdam's extent of brokenage, number,size and loction participtively. - Prepare the matterial. - Implement the improvement of the checkdam by self reliance in the workforce.	The Checkdam has been improved by 50% self relliance finance realized in workforce	There 2 checkdam has been refunctioned again.	Bon pakel Ngandong					X	Village Government and Forestry Agency.
	Improving the water channal flowing into the checkdam.	- Identify the water channal's extent of brokenage, number, size and loction participtively. - Prepare the matterial. - Implement the improvement of the water channals by self reliance in the workforce.	The water channel flowing into Checkdam has been improved and functioned again by 50% self relliance finance realized in workforce	There are 3 water channals inflowing to checkdam funtioned again and managed by 2 villages.	2 in Ngandong 1 in Bon pakel					X	Village Government and Forestry Agency.
	Handling the rule of water management and water keeper jaga tirta) to function.	- Hold a village meeting to formulate rule of water management and arrange the feasible water keepers. - Impement the rule and function the water keepers.	The rule has been enforced and supervised by the water keepers.	- There is rule ofwater management - There are village water keepers that responsible to the community.	Ngandong Bon pakel					X	Village Government and Forestry Agency.
Village Action Plan of PLATAREJO											
1 Declining the ground water availability	Constructing ground wells ('sumur pantek')	- Determine the location and the size of wells along with the people - Prepare the constructing materials - Implement the construction	- A number of ground wells ('sumur pantek') are established and running well	- Ground wells ('sumur pantek') with 50m depth at least, in each village, and are operated by the communities		X					
	Reforesting	- Determine the varieties and quantities of plants - Propose the seed of teak , mahaghony to the Forestry Agency. - Consolidate the local seeds to support the availability and to assure the on time delivery. - Implement the reforesting plantation.	- Increasing the coverage of reforestation, particularly around the wells	- At least 23,568 Ha of people's land are planted with jati and mahoni with the standard of conservation of 425 plants per Ha - The land around the 4 wells (Kalisoko, Dawuhan, Gua Platar, Jambe) are planted with jati and mahoni			X				
2. Bare (deforested) State Forest	Managing the bare (deforested) state forest	- Disseminate the idea of the importance of forest conservation to the people - Reforestation by Perhutani (State Forest Ltd) - Coordination between Perhutani and the society to establish an agreement of forest conservation - Increase the rule-obedient of the Perhutani and the community in maintaining the order and law enforcement - Carry out the LMDH (Forestry Village Community Institution)'s Program more intensely	- Growing an understanding of forest conservation between Perhutani and the community so that the sustainability of the state forest are well maintained from the ecological, economical, social and cultural view.	- The state forests are well maintained according to the rules of forest conservation/ management - The enforcement of the related laws in accordance with the rules - The number of conservational trees are adequate according to the technical standard of conservation		X	X	X	X		
3. High cost of agriculture production while the revenue from selling the product remains low	Balancing the selling (harvest) price and input and operating costs.	- Identify the existing farmer groups - Coordinate with the committees of the groups - Establish networks between farmer groups - Link the farmer's networking with some cooperatives that are willing to pay agricultural products at higher price. - Applicate proposals to any related institutions (department of trade and department of agriculture) for assistance to the farmers with regard to administration, production, financing and marketing matters. - Propose the provision of any subsidy to the provision of fertilizers and seeds	- The farmers receive adequate price level of agricultural products. - A better understanding of farmers towards	- There is a wisdom produced by the government which tends to farmers in propering harvest price - A cooperation desire to buy harvest with proper price		X	X	X	X		

4. The high number of eroded location in communities land and river bank	Treat erotion with drop construction	- Determine the location and the size of drop with the people - Prepare the constructing materials - Run the construction	- Erotion along the river bank is reduced by drop construction	The river erosion in 5 subvillsges about 0.233 Ha conserved by conscruction of 5 drops	Ngampohan Watu Ireng Kidul Platerejo Platar Nawangan Kidul		X				People Village Leader
	Reserving erotion with ended hole construction	- Determine the location and the size of ended holes with the people - Prepare the constructing materials - Run the construction	- Ended hole is consttructed in each communities forest with self help	- Each land in 6 subvillages about 23.568 Ha are conserved	Ngampohan Watu Ireng Kidul Watu Ireng lor Platerejo Nawangan Lor Nawangan Kidul		X				People Village Leader
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**1**	**2**	**3**	**4**	**5**	**Authorities**
4. The high number of eroded location in communities land and river bank	Reserving erotion with stream bank protection construction	- Determine the location and the size of stream bank protection with the people - Prepare the constructing materials - Run the construction	- Erotion along the river and the communities land are reduced by stream bank protection construction	- The river bank in 5 subvillsges about 0.233 Ha conserved by conscruction of 5 stream bank protections - The communities land in 5 subvillages about 0.589 Ha conserved by conscruction of 5 small gully plug	Ngampohan Watu Ireng Kidul Platerejo Platar Nawangan Kidul		X				People Village Leader
	Reserving erotion with banquet terraces construction	- Determine the location and the size of banquet terraces with the people - Prepare the constructing materials - Run the construction	- Banquet terraces is consttructed in each land of the communities with self help	- Stone wall terrace is constructed in community forest with about 23.568 Ha	Ngampohan Watu Ireng Kidul Watu Ireng lor Platerejo Nawangan Lor Nawangan Kidul		X				People
	Reserving erotion with improving terrace	- Determine the location and the size of terrace with the people - Prepare the constructing materials - Run the construction	- Improving terrace is done in each land of the communities with self help	- Improving terrace is done in each community forest with about 23.568 Has	Ngampohan Watu Ireng Kidul Watu Ireng lor Platerejo Platar Nawangan Kidul		X				People
	Reserving erotion with plantation (reforesting)	- Determine the varieties and quantities of plants with the people - Applicate proposals to any related institutions. - Plant the conservation trees	- Planting is done, primarily on the erotion land	- The number of trees is added on erotion surfece area in 6 subvillages abiut 23.568 has.	Ngampohan - Watu Ireng Kidul Watu Ireng lor Platerejo Platar Nawangan Kidul		X				People Village Leader, Related Institution
5. The checkdam is fulfilled by the sediment.	Managing forest seriously by Perhutani and community forest	- Disseminate the idea of the importance of forest conservation to the people - Coordination between Perhutani and the society to establish an agreement of forest conservation - The enforcement of the related laws in accordance with the rules (UU)	- Growing an understanding of state forest management	- The state forests are well maintained according to the rules of forest conservation/ management - Erosion on the land surface about 23.568 Ha in perhutaniand community land, so that no more sediment in checkdam	All subvillages except Ngudal			X			Perhutani People Village Leader
	Implementing PHBM System (Community Base Forest Management)	- Disseminate PHBM System (Community Based Forest Management) to the people - Coordination between Perhutani and the society to establish an agreement of forest conservation - The enforcement of the related laws in accordance with the rules (UU)	- PHBM System is implemented in the forest management		All subvillages except Ngudal			X			Perhutani People Village Leader
6 Village Institution is not strong yet in forest management	Village Institution has its role in forest management	- Coordination between Perhutani and the society to establish an agreement of forest conservation - Delegate authorities to the rural agency/villagers in imposing punishment to those who break the rules of forest conservation - Implement the rule of forest management according to the agreement	- Village Institutions own rules and rights to impose sanction for those who disobey the rules	- Penalty or punishment are enforced	All subvillages in Platarejo				X		People Village Leader Related Institution
7. The lack of official assistance	Cooperation between rural authorities, communities and related agencies in regard with intensive assistance to the people	- Identify the existing groups and their problems - Coordination between the village leaders, the communities and related institutions in deciding the assistance guidance - Implement the planned assistance	Cooperations are established and linked between the village leaders, the communities and related institutions to find any solution of communities' problems	- Some agencies/ government bodies assign their officers to assist the people intensely - Regular meetings are established within the groups							People Village Leader Related Institution

8. Underutilized 'Checkdam'	Restoration and maintainance of checkdam	-Disseminate the RKTD outcomes to the communities particularly for those who live in the 'checkdam' areas -Identify the damaged 'checkdam' together with the communities -Prepare the materials for reconstruction and renovations -Dredge 'checkdams' -Extend irrigations -Run the renovations and reconstructions	-'Checkdam' are operating well from 50% share of the people	-Three checkdams operate and are managed by those three villages -The communities' land of 0.233 Ha around the river of 5 villages are safe from erosion		X			X		People Village Leader Related Institution
	Constuction drop in the irigation to the 'checkdam'	-Determine the location and the size of drop with the people -Prepare the constructing materials -Run the construction				X		X			People Village Leader Related Institution
	Increase the conserving trees.	-Determine the varieties and quantities of trees with the people -Propose proposals to any related institutions. -Plant the trees									People Village Leader Related Institution
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**Years 1**	**2**	**3**	**4**	**5**	**Authorities**
9 The disobeyed farmer group/village 's rules	The group/village's rule is obeyed by the villagers and other parties.	-Identify the existing groups and their crucial problem and the way out to overcome. -Handle a stakeholder meeting to enforce the sanction given to the disobeyed people to the groups/village's rule. -Implement the group/village rules and their sanctions. -Strengthen the group/village's capacity to monitor and evaluate the rule enforcement.	-Pelaksanaan aturan kelompok yang telah disepakati	-Ada sanksi yang diberikan pada anggota kelompok bila melanggar aturan kelompok -Ada pertemuan rutin kelompok				X			People Village Leader Related Institution
10 The lack raw material for brick small industries.	Use the unproductive soil and sediment of erosion near the river as raw material for brict small industries effeciently.	-Handle the village meeting to arrange the Village Regulation on usage of unproductive soil/land at village. -Socialize the Village Rule to all community groups. -Use the unproductive soil/land for brick raw material in friendly environment manner.	There is an agreement on usage of unproductive soil/land without destroying the conservation structure between the villagers and the Village Government.	-The raw matterial for brick small industries fulfilled. -The conservation's effort and result in village are not destroed. -The law enforcement obeyed by the community and other parties.	Platarejo Watu ireng kidul					X	People Village Leader Related Institution
Village Action Plan of TEGIRI											
1 The unfertile land.	Reforestation by planting teak, mahogany and sengon laut.	-Socialization the result of Village Action Plan to the villagers. -Identify more deely the unfertile land in village. -Handle the self reliance of village nursiry for teak, mahoghany, sengon laut. -Implement the reforestation planting and their manintenance -Inform and involve the conservancy principle and techniques in land management. -Make terrace and drop structure and farmers's land.	Decreased the unfertiled land, and increased the fertil land with the introduced reforestating trees.	The reforestation had been implemented in 55.578 Ha very erodble land in 9 subvillages with teak, mahoghany, according to technical standar (425 trees / ha)	Batu Laban Klumpit Sumur Wonosari Galih Lorog Jliru Jrakah	X					Community and Village Government
	Land management by improving the terrace and drop structure.		The land (either in State or Community forests) managed according to conservancy principles.	Each farmer have made relevant terrace at sloppy land and managed their land according to its contour (Local: Nyabuk Gunung) and completed by drop structure.	All subvillages						
2. There high number of uncovered and critical land in the village.	Reforeting with the teak and cahew nut	-Propose the seed (teak and cashew nut) firom District Forestry Agency -Delivery the seeds on time -Plant the seeds at the community land -Maintain the re-foresting trees.	Incresed the land covering with cashew nut trees.	Teak and cahew nut are planted in the critical land 55.578 in width at 9 subvillages.	Batu, Laban, Klumpit, Sumur, Wonosari, Galih, Lorog, Jliru, Jrakah	X					Community and Village Government, Related Agencies
3. The low function of Small Gully Plugs	Rehabilitation of the small gully plugs.	-Socialization to the result of VAP to community arround the small gully plug. -Identify the broken small guilly plugs (location extent, available resources). -Dridge the dam -Prepare the material need to improve -Implement the plan to improve the small gully plugs and checkdam.	The checkdam refunctioned again , and 50% financied by the community's self relliance.	-5 chek dam managed by the Sambeng village, 2 by Klumpit, and 2 by Sumur one. -There is 0.985 ha safe from rill erosion, 0.985 Ha from land sliding and 0.884 Ha from bank erosion with the functioned 9 checkdam.	Sambeng Klumpit Sumur subvillage All subvillages		X				Community and Village Government, Related Agencies
4. There much erodable location the lable land	Handle the erodable land with small gully plug and make the water ditch protection.	-Decide the location for small gully plug and and terrace need and their size participatively. -Prepare the small gully plug and terrace needed. -Implement the small gully plug and terrace plan.	Functioned small gully plugs and terrace made the soil not easy to erode.	7 small gully plugs and 7 terrace of the bank are managed well by 7 subvillages at the water ditches.	Batu, Tumpang, Laban, Klumpit, Sumur, Butuh, Jrakah		X				Community and Village Government, Related Agencies
5. Low attention of District Government to the farmer group's	Developing the farmer group's activities that can be done together between the group	-Propose the next location for National Movement on Soil and Forest Rehabilitation -Propose the softloan to handle the production of agriculoture and	The realized community's proposal to the District Government	-There delivery of teak seeds from the National Movement on Forest and Land Rehabilitation. -The increased number	All subvillages in Tegiri			X			Community and Village Government, Related Agencies

condition.	and the District Government	improve the group capital. - Propose the softloan for livestock of cow and sheeps.		of farmer group's capital from the soft loan. - There is livestock development (for cow and sheeps) from Livestgock and Sea Agency.								
6. There is no communication between the community and the Field Officers (Agroicultur and Forestry Agencies)	Create the communication between the viollagers (farmer groups) with the Government Field Officers to solve the village problems.	Propose to District Government to select the Field Officers that lieve in or near the accompanied villages.	The communication done give the farmer groups's development between the Field Officers and farmer groups.	There is Field Officers that come regularly to the village to assist the villagers solvin the problems.	All subvillages in Tegiri				X			Community and Village Government, Related Agencies
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**Years**					**Authorities**	
						1	**2**	**3**	**4**	**5**		
7. Low performance of land management caused by the invasion of monkey, forest pig.	Handle the invasion of monkey and forest pigs	Prepare the food crops from planting until harvesting.	The pig and monkey invasion not consume all the result of food crops.	The Community can harvest the agricultur	Land around the state forest					X		Community and Village Government, Related Agencies
	Change the function of land from agriculture to forestry and prepare other economic alternative for income generiting.	Propose the seed to the District Government to substitute the failed food crops with the teak trees to change the land function. .	The Community can harvest the agriculture result that combined with forestry trees in invased zone.	The invased area in 3 villages had been planted with teak trees.	Jrakah Galih Jliru					X		Community and Village Government, Related Agencies
Village Action Plan of TEMPURHARJO												
1. The shrinked supply of local watershed	Village Regreening	- Identify the location and number of conserving trees needed. - Decide the kind, number and delivery of conserving trees. - Propose the subsidy of conserving trees to the Forestry Agencies. - Prepare the self reliance in handling the seeds needed such as teak, mahoghany - Plant the multipurpose trees at the farmer lands.	The conserving trees have been planted in the eroded location, especially around the source of water.	Numberof standing trees are icreasing in 18.739 Has of community land and around the 12 source of water (Ringin, Sawah, Menjalin, Nglungguh, Belik jangan, Gayam, Song-song¥Dung gembloh, Pakoman, Dayangan,Ngetuk Panguripan, Belik urip, Tangkisan).	Kragilan* Dunggupit* ** Guyangan* Tukluk Krakal* Bokuning Lor** Bokuning Kdl* Ngargosari* * Tempuran lor* * : Sumber air	X					Villagers, Village Government, and Forestry and Public Work Agencies.
	Looking for the new source of water.	- Identify the new source of water. - Explorate the found new source of water. - Participative Water Management.	It found a source of water that able to suppy the community's need of clean water.	The sum of water sources are increasing more than 12.	All subvillages in the Tempurharjo	X					Villagers, Village Government	
	Handling the law enforcement in wood trees cutting.	- Hold village meeting to formulate the rule of wood trees cutting and sanction for the disobeyant. - Enforce the rule of wood trees cutting.	The rule of wood trees cutting understood by the villagers.	- There is rule of wood trees cutting. - Enforce the sanction of rule for the disobeyant.	All subvillages in Tempurharjo	X					Villagers, Village Government, Perhutani.	
2. The high number of eroded land	Handling the erosion with credit terrace	- Identify the credit terrace location and size. - Prepare matterial for credit terrace. - Impement to build the credit terrace in the farmer's land.	It has been made credit terrace at each family's land in self relliance manner.	There are 18 sub village are secure from the sheet erosion by the credit terrace in 0 .739 Has at 7 subvillages	Kragilan Dunggupit Guyangan Tukluk Krakal Bokuning lor Bokuning kidul	X					Villagers and PKL	
	Handling the erosion with slopping grassing at the hilly terrace.	- Identify the location's position and number that need to plant the slopy grassing. - Prepare relevant and prefferable grass. - Impement the planting of grass barrier at terrace.	Sloppy grassing along the ditches in self relliance manner.	The 18.739 Has of community forest are secure from sheet erosion by increased cover trees at terrace.	Kragilan Dunggupit Guyangan Tukluk Krakal Bokuning lor Bokuning kidul	X						
	Handling the erosion with vegetative method	- Identify the location for conserving trees. - Decide the kin, number and delivery of conserving trees. - Propose the subsidy of conserving trees to the Forestry Agencies. - Prepare the self reliance in handling the seeds needed such as teak, mahoghany - Plant the multipurpose trees at the farmer lands.	It has been planted the conserving trees in the community land by 50% self relliance finance realized in workforce	The land 18.739 has of the community forest are safe from sheet erosion by the well managed	Kragilan Dunggupit Guyangan Tukluk Krakal Bokuning lor Bokuning kidul	X					Masyarakat Pemdes Instansi terkait	
3. The high extent of bare lands.	Handling the bare land through	- Identify the location for conserving trees in the bare area.	The teak and manggoes trees are	- The community's bare area 59.305 Has in	All subvillage		X				Masyarakat Pemdes	

	regreening program.	- Decide the kind, number and delivery of conserving trees. - Propose the subsidy of conserving trees to the Forestry Agencies. - Prepare the self reliance in handling the seeds needed such as teak, mahoghany - Plant the multipurpose trees at the farmer lands	planted at the community land with the seed delivery according to the planting season and 50 % do by the community's self relliance.	width are planted by the 10 subvillages with the teak and mahogany. -The teak and mahaghony are growing well around the source of water	in Tempurharjo						Instansi terkait
4. The unfunctioned checkdam	Improvement the cekdam	- Identify the checkdam's brokenage. - The checkdam clearingin participative manner. - Prepare the material need to checkdam improvement - Implement the checkdam improvement.	The checkdam is functioned again by soil clearing with participaton of villagers, 50% financed by the villagers actualiized in workforce for the improvement.	1 checkdam had been functioned again and well managed b 1 subvillage.	Krakal			X			Masyarakat Pemdes Instansi terkait
5. The smal gully plug and stream bank protection are broken	Improvement the small gully plug	- Identify the broken small gully plugs' location, size and number. - The checkdam clearing in participative manner. - Prepare the material need to improve the small guly plug and stream bank protection. - Implement the plan to improve the SGP.	The small gully plug functioned again, 50% financed by the villagers actualiized in workforce for the improvement.	3 small gully plug has been functioned again and well managed by 3 subvillage community.	Krakal Dunggupit Ngargosari				X		Masyarakat Pemdes Instansi terkait

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
5. The smal gully plug and stream bank protection are broken	Increase the small gully plug		There is 3 small gully plug has been made to secure 1.565 Has of community land from bank erosion aing the river flows into 7 subvillages.	The community land in 7 villages (1.565 Has) are safe from bank erosion by the functioned 3 new small gully plugs.	Guyangan Kragilan Dunggupit Guyangan Tukluk Tempuran lor Tempuran kidul				X		Masyarakat Pemdes Instansi terkait
6. The low guidance and assistance from the Village Technical Assistant (PTD), Government Filed Officers (Agriculture and Forestry Agencies)	Creating the collabortive works between the Villagers, Village Government and the Field Officer to solve the village problem in conservancy and economic development.	- Identify and communicate the farmer groups's problem. - Assess the way out needed. - Handle the regular coordination to effectify the collaborative action to do according to the agreement made. - Implement the action plan. - Monitor and evaluate termly.	There is collaborative activities betwen the villagers and their Government, and the Field Officers to overcome the economic, conservancy and isntitution problems	The Forestry, Agriculture, and Public Work Agencies send their Field Officers to assist the villagers overcome the economic, conservancy and isntitution problems regularly	Desa Tempurharjo					X	The Villagers, Village Government, and Forestry and Public Work, Bappeda Agencies.
Village Action Plan of JEBLOGAN											
1 The village road is difficult to access.	Improvement the village road and subvillage's street	- Socialization Village Action Plan result to the society. - Define the village road need to improve. - Handle the needed material. - Implement the road side protection, water spillway.	Main road and street among the subvillages had been improved 50% through self reliance activity by the community.	- Village main road and subvillage's street are not easy breakable. - Drop structure managed by the Village Goverment - There is covering trees along the village main road.	Main road and second road in Jeblogan Village.	X					Villagers, Village Government, and Related Agencies.
	Maintain the village' road through retri-bution mechanism.	- Decide the road stoping and retribution mana-gement. - Implement the retribution mechanism.	The main road maintined and easy brokable.	Retribution fund operated to maintain the road.	Main road and second road in Jeblogan Village.	X					Villagers, Village Government, and Related Agencies
2. Low education level of the villagers	Human resources development through basic education.	Propose to build the junior and senior school to the National Educational Agency in this area.	There is a junior school led by the Goverment or Social Organization as mean to improve the human resource.	- Basic School graduatees access to junior school. - Decreased the underaged marriages.	All subvillages in Jeblogan Village.	X					Villagers, Village Government, and Related Agencies
3. Decreased clean water availability	Diging the public well and saving containers.	- Decide the location of public well and saving containers. - Design number, size and depth, and mechanisme of maintenance. - Implement the diging for arthetic wells and build their saving container and distibuting pipes.	Clean water are available in the dry season anda saving container for them through self reliance activity by the villagers.	There are 6 digged artesis wells and their saving containers that managed by 6 subvillages.	Gesing Sambeng Nglepo Pundong, Tengger Suden	X					Villagers, Village Government, and Related Agencies
	Reforestation	- Decide the location to to reforest, number and kind of trees need in participative manner. - Propose some coservation trees to the Foretry Agency in Wonogiri District. - Prepare the nurseryMeng to support the self reliance reforestation - Implement the reforestation planting.	Conservation trees had been planted at community lands	The community's critical land in 102.091 Has in width had been planted with conservation trees according to the technical standard 450 trees/ha)	Tenggar Bero Dayu Brenggolo Pundung wetan Suden Sambeng Nglepo	X					Villagers, Village Government, and Related Agencies.
4. Hig extent of soil erosion in village.	Handle soil erosion by making small chechkdam	- Socialize the result of Village Action Plan to the eroded land owners. - Decide the location and size of checkdam - Handle the matterial needed to make the checkdam. - Implement the checkdam making.	Community can share 50% of the budget realized in the some material, and workforces to make checkdam for erosion controll.	2 checkdam ad been made and managed by 2 subvillaes.	Sambeng Suden		X				Villagers, Village Government, and Related Agencies

	Handling the rill erosion through reforesting	- Decide kind and number of conservation trees needed and according to the local condition. - Plant and maintain the reforesting trees. - Handle the village cutting rule.	The eroded location in the community land had been planted by conservation trees.	The community's critical land in 102.091 Has in width had been planted with conservation trees according to the technical standard 450 trees/ha)	Tenggar, Bero Dayu, Brenggolo, Pundung wetan, Suden, Sambeng, Nglepo		X				Villagers, Village Government, and Related Agencies
5. The reforestation project is not distributed averagedly.	Distribute the reforesting projects.	Propose new the eroded area of project to other subvillages for reforesting.	Reforesting projects cover all subvillages need.	All subvillages have occasion to find the reforesting project according to their real needs.	All subvillages in Jjeblogan Village.		X				Villagers, Village Government, and Related Agencies
6. Limmited transportation means amongs the subvillages.	Handle the village transportation colaboratively.	Attract the investor to operate the village transportation regulary.	Transportation between the subvillages is going fluently.	- There is village transportation cars and motors). - The cars and motors that operate in village rugularly.	All subvillages in Jeblogan Village			X			Villagers, Village Government, and Related Agencies and Investor
7. Low opportuity job in the village.	Creating and developing the new opportunity job in village	Propose the soft loan to the District Government to develope the new job and business in the village.	There is a soft loan that enables to open the new business based on local resources.	- There is an entrepreurer that absorb the workforces. - Decreased the unemployed peoples n village	All subvillages in Jeblogan Village			X			Villagers, Village Government, and Related Agencies

Main Problem	Program (Solution)	Activities	Result (Target)	Indicator	Location	Years 1	2	3	4	5	Authorities
8. Low attendance of Government Field Officers (from Agriculture and Forestry Agencies) in solving the villager's problem.	Arrange the collaborative acivities between the villagers, Village Government and the Field fficers.	- Create regular coordination to handle collaborative activities involve the both parties (villagers and Field Officers).	There is collaborative work between the villagers and the Field Officers to solve the village's problems.	The regulary attenandce of Gov Field fficers in solving the village's problems.	All subvillages in Jjeblogan Village				X		Villagers, Village Government, and Related Agencies
9. Village Meeting Office too far to access.	Continue to build the new Village Meeting Office in the strategic location	- Village Meeting to form the Finance Committee. - Realize the community self reliance of funding. - Handle the relevant matterial and tools, and workforce to build. - Implement the plant to build the new Village Meeting Office.	The new Village Meeting Office had been made at strategic location, at more accessible by the community from all subvillages.	- The new Village Meeting Office can be functioned. - The Village Government Officers are ready to serve the community's administrative need at the working hours.	Brenggolo (midst of village)				X		The Villagers and the Village Government
10. Forestation seeds delivery too late to plant	Delivery of forestation seeds on time	- Propose to the Project Officer to deliver the seeds on time according to local situation. - Activate the farmer group	Seed of forestation activity delivered on time.	The forestation seeds come on time and planted and grow well.	All subvillages in Jeblogan					X	Instansi terkait Pemdes
11. The deforested land in the State Forest managed by Perhutani.	Reforetation	- Coordinate togther to arrange collaborative management and agreement between the Community and Perhutani. - Agree the kind, number and time to substitute the deed forestation trees. - Implement the substituting activity of reforetation trees.	Lahan perhutani hijau kembali	Number of standing trees in State Forest are according to the technical standard (425 trees/ ha)	Suden, sambeng, Brenggolo					X	The Villagers, Village Government, and Perhutani.
	Handlle the Law Enforcement	- Socialize the agreed rule to cut the trees (selective cutting) - Impmenent the sustainable forest management rules. - The Community and Perhutani do the collaborative sustainable forest management to assure the sustainability and safety of state forest.	There is a common agreement between the Community and Perhutani in handling the sustainable forest management in the State Forest	- The state forest handled according to sustainable forest management - Give sanction for all parties who hit the sustainable forest management. Rule.	All subvillages in Jeblogan					X	The Villagers, Village Government, and Perhutani
Village Action Plan of SELOMARTO											
1. The high prioce of agriculture input and the low price and number of agriculture product	Balance the harvest price and the input one	- Identify the existing farmer group to be revitalized. - Reorganize the farmer groups's capacity to organize their members. - Build the network of farmer group to breaktrough the agricultur input handling and marketing the fairtrade. - Proposes the Government protection to the local product's agriculture prices. - Propose the Government subsidy for fertilizer and excellent seeds for agriculture. - Manage and maintain the local intensive agriculture.	The farmer's result price decided justly by the buyers.	There is Government polecy that support to maintain the just price for agriculture products.	All sub villages in Selomarto Village.	X					Community and relevant Agencies, Village Government
2. The Integrated Service Post is stagnant and lack of finance	Reactivate the Integrated Service Post.	- The Integrated Service Post's management and cadres propose the subsidy of nutized food for the under five years children to Social Welfare Agency. - Propose additional finance to handle The Integrated Service Post's activ ities. - Rearrange the activities and management perspective. - Implement The Integrated Service Post's activities plan	The Government Finance subsidy can be sent and reactivated the The Integrated Service Post .	- There is routine agenda to give the additional nutrized food and weighting the under five years children and the eldest age people. - The routine ccordination between The Integrated Service Post 's management and cadres are going on.	All sub villages in Selomarto Village	X					Community and relevant Agencies, Village Government, cadre of Integrated Services Post

				-Increased number of the healthy under five years children.								
3. Dry source of water while dry season.	Increase the digged sources (arthetic source) (± 100 m)	- Discuss and decide the location, number and size of the sources. - Prepare the material need to build the sources. - Implement the source digging.	There a digged source in every sub villages and functioned in optimum way.	-Satu dusun punya satu sumur bur dengan kedalaman ± 100 m dan dikelola dusun -Ketersediaan air bersih tercukupi pada musim kemarau	All sub villages in Selomarto Village.	X					Community and relevant Agencies, Village Government
	Increas the covering trees around the sources with teaks.	- Bdecide the kind, number of reforesting trees needed. - Propose the teak seeds to District Forestry Agency. - Prepare the self realiance nurseries for teak. - Implementg planting of covering trees around the sourcer water.	Teak seed planted around the source	-Number of planted teak around the source is increasing according to technical standar of conservancy. -The source in Ngumbul and Gua are not drying when dry season.	Selomarto Selomoyo	X					Community and relevant Agencies, Village Government
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**Years 1**	**2**	**3**	**4**	**5**	**Authorities**
4. The Co-op of Lend and Saving money is lack on capital to serve the lenders.	Optimize the function of Co-op management to handle additional capital .	-The Co-op's management propose the additional capital to other parties and Co-op Government Agency -Improve the management's capacity through co-op development trainings. - Increase the members 's commitment in organization and co-op development.	The Co-op can run well to fulfill the member's need of money.	- The member's ;ending can be fulfilled. - There is no bad performance loan.	All sub villages in Selomarto Village.		X				Co-op's members and management, related agencies.
5. The low information of food crops agriculture	Increase the farmers's knowledge and capacity in increasing the foodcrops results.	- Identify the existing farmers groups's condition and problems faced. - Build coordination and communication between the farmers and Field Officer from Agriculture Agency. - Inform the activities needed to do together between the Government Field Officers and the farmer groups. - Implement the information to overcome some pest in the food crops in villages.	Farmers can extract therir land for food crops by adapting the conservation principles and solves their problem participatively.	-There is Field Officers that accompany the farmer group to solve the problems of food security at village. -There are new terracing on the sloppy land, and farming according to the land contour. -The drop structrure in the community land managed self relliance by the villagers. -The farmer meet routinely to discuss the existing problems.	All sub villages in Selomarto Village.			X			Community and relevant Agencies
6. Unaveraged development of physic structure at all villages.	Distribute the opportunity of physical development according to the prioritized village problems.	- Identify the physical problem or area that need to improve in all sub villages. - Select the prioritized subvillages according to the real problems and Government's program. - Implement the development of physical problem of territory in all subvillages according to the agreed priorities.	- the development of physical problem of territory in all subvillages according to the agreed priorities.	- the development of physical structure building are managed by the agreed prioritiy subvillages.	All sub villages in Selomarto Village		X				Community and relevant Agencies, Village Government
7. There are much eroded location in villages.	Maintain the eroded location by serving the broken drops.	- Socialization the result of VAP to farmers who their land are eroded. - Identify the existing and broken drops and building the rule to maintain them participatively. - Implement the drop structure maintenance.	It had been maintained a drop and functioned again by the community in self relliance manner.	-One refunctioned again by a sub village. -The gully erosion 0.728 Ha in width at four villages had been overcomed by the drop function. -The community land 1.286 has along the river in 7 villages safe from the bank erosion.	Kayu Apak Kedungrejo Sumberejo Kayuapak Ketro			X			Community and relevant Agencies, Village Government
	Revitalizing the farmer groups.	- Identify the existing farmer groups. - Coordinate among the farmer groups to arrange the activities based on their needs and to conserve the land. - Handle the routin meeting.	The farmer groups are active with more improved human resources than before.	- There are a routine group meeting. - There is group's activity that increasing the farmer's knowledge and income.	Selomoyo Gluto Losari Selomarto Kedungrejo Banceran Ketro			X			Community and relevant Agencies, Village Government
	Increase the reforesting trees.	- Identify the location of critica land, kind of conserving trees suitable, and duantities needed. - Propose a subsidy of conserving trees in natura to the District Forestry Agency. - Prepare the self relliance's nurseries. - Implement the plant to resforest the cirticl land.	The reforesting trees had been planted in the community land.	The area of 2.014 Ha in the community land has been planted with teak, mahoghany according to the technical standar in conservancy (425 trees/ha).	All sub villages in Selomarto Village			X			Community and relevant Agencies, Village Government
8. The high invasion by the destructing animals (monkey and forest pigs).	Overcome the monkey and forest pig's invasion	Maintain the foofcrops from the invasion until harvesting time.	The monkey and forest pigs didn't destruct and consume all the agricultural product.	The community who extract the land aroun the State forest can harvest the food crops.	Arround the state forest			X			Community and relevant Agencies, Village Government
	Develop the buffer zone to add the safety zone for the	Propose the teak seed as the substitute of the foodcrops that destructed by the monkey and	The villager can harvest from the land invased by the	The community land in 3 subvillages that invased by the monkeys and forest	(Godang Sumberejo Kayuapak)						

	monkey and forest pigs.	forest pigs.	monkeys and forest pigs.	pigs has been planted by the teak trees.								
9. There much clear land by trees in the State Forest .	Penanganan lahan perhutani gundul	-Socialization the VAP results to the villagers. -Coordinate together between the villagers and Perhutani to make common agreement on state forest managmement. (supervising, safety, maintaining, and harvesting) and how to sustaint the state forest. -Increase the law enforcement of the Perhutani Official in handling the rule harrasement according to the running Law in forest management.	There is a common agreement between the villagers to sustain the state forest management from ecology, economic and social aspects.	-The state forest managed according to the agreed rule. -The adopted law according to the existing rules.	The state forest in Selomerto.			X			Community and relevant Agencies, Village Government, Perhutani,
Main Problem	**Program (Solution)**	**Activities**	**Result (Target)**	**Indicator**	**Location**	**1**	**2**	**3**	**4**	**5**	**Authorities**
10. The unfunctioned checkdam	Improve and maintain the checkdam	-Identify the broken checkdam -Prepare the material for checkdam improvement. -Replace the checkdam door. -Add the water spillway -Propose the finance for development 50% to the District Government to improve the checkdam.	Checkdam is functioned again through improving that supported 50% of total finance by the community.	-The checkdam door replaced and functions again. - 3 Checkdams managed by 3 villages.	Godang Sumberjo Banceran				X		Community and relevant Agencies, Village Government
				-The Community Land 0.728 Ha in width at 4 subvillages are safe from gully erosion by the functioned 3 small gully plugs.	Kedungrejo Sumberejo Kayuapak Ketro				X		
				-The community land 1.286 has along the river in 7 villages safe from the bank erosion by the functioned 3 small gully plugs.	Selomoyo Gluto Losari Selomarto Kedungrejo Banceran Ketro				X		
11. The stopped credit (bad performing loan) caused the group problem in trust and responsibility.	Increase the group,s trust and responsibility .	-Identify the existing problem faced by the groups. -Coordinate the member and managemen of group to overcome the stopped credit -Enforce the sanction to undescipline of saving and lending obligation. -Increase the group management's capacity in handling the Co-op.	Bad performing loan can be overcomed by the groups.	-All the members and management of group obey the agreed rule together. -There is no late payment of member's credit.	Selomarto Village				X		Community and relevant Agencies, Village Government
12. The less coordination between the caedres and the management of Family Welfare and Empowerment Institution(LPKK)	Build a healthy an open communication between the cadres and the management of of Family Welfare and Empowerment Institution(LPKK)	-Identify the problems ikasi permasalahan di tingkat organisasi -Coordinate between the the caedres and the management of Family Welfare and Empowerment Institution(LPKK) to handle the developing problem and women's role in soil conservation. -Pelaksanaan kegiatan LPKK yang terkoordinir	The coordination are effective and making the activity go fluently.	-There is a regular meeting between the the caedres and the management of LPKK (Family Welfare and Empowerment Institution)						X	Community and relevant Agencies , Village Government
13. It is diccult to seek the Village Facilitator to influence the Development process.	Allow the criteria for Village Facilitator	-Village Government and the villagers decide the criteria of Village Facilitator that able to do her/his duties in the village -The Village Government announce to the villagers about criteria and someone who fulfill the requirement. -Recruit Village Recruitment	The selected FD that able to play their role and function.	-There is 2 Village Facilitator selected participatively.	All sub villages in Selomarto Village.				X	X	Community and relevant Agencies, Village Government

Annex No.11
Institutional Study for Watershed Management

THE STUDY ON
COUNTERMEASURES FOR SEDIMENTATION
IN
THE WONOGIRI MULTIPURPOSE DAM RESERVOIR
IN
THE REPUBLIC OF INDONESIA

FINAL REPORT

SUPPORTING REPORT III

Annex No.11: Institutional Study for Watershed Management

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CHAPTER 1 INTRODUCTION

1.1 Scope and Objective of Study

This Annex 11 is concerned with legislation and the organization and management of watershed conservation in the Wonogiri dam catchment area. Also, two relatively recent initiatives for improved water resources management were examined. Both of these will, it is hoped, benefit watershed conservation in Wonogiri and the nation.

During the study, issues were identified in each area and remedial action proposed.

1.2 Summary of Contents

After this introduction, Chapter 2 reviews the main legal products governing watershed management in three areas: forestry, agriculture and regional administration. Also included is a 2005 regulation enabling the relatively new National Movement for Partnership on Water Conservation (GN-KPA). This initiative is intended to remedy the present poor state of water resources in Indonesia. The chapter concludes with a list of legal issues to be addressed. Especially important are the lack of enforcement of existing law and the lack of agricultural regulations protecting the environment.

Chapter 3 summarizes and assesses the institutional framework for watershed management at three levels of government: local, provincial and other regional (such as large river basin-based), and national. Also included are a review of the recently established river basin institutes and agencies, and the national, provincial and local units of GN-KPA. A list of nine issues and 22 outline remedial recommendations concludes the chapter.

In Chapter 4, a scheme is outlined for the voluntary transfer of funds from downstream farmer beneficiaries of the Wonogiri dam to less prosperous farmers upstream of the dam.

Chapter 5 sets out the projects selected for the feasibility study from issues and recommendations made in previous chapters. There are four principal projects and three secondary projects selected from the outline recommendations mentioned above. The principal projects are:

(i) Funding assistance from Wonogiri dam beneficiaries for watershed conservation activity in the Wonogiri Dam catchment;
(ii) A pilot implementation of a committee to coordinate watershed management in the Wonogiri Dam catchment;
(iii) Strengthening the forestry sub-dinas in Kabupaten Wonogiri;
(iv) Strengthening the agriculture dinas in Kabupaten Wonogiri.

The secondary projects are:

(v) Inclusion in mission statements of watershed management responsibilities;
(vi) Transfer of more funds from central government to kabupaten government for capacity building purposes;
(vii) Implementation of Training Needs Analysis, especially for field staff.

Organization of project implementation is suggested in Chapter 6.

CHAPTER 2 REVIEW OF LEGAL FRAMEWORK FOR LAND AND SOIL MANAGEMENT IN WONOGIRI WATERSHED

2.1 Introduction

This chapter briefly reviews the legal framework of land and soil management[1] in the Wonogiri watershed (DAS Wonogiri). Although watershed management directly affects the development of water resources and flood control, the in-stream management of water resources is not a significant influence on the quality of watersheds and is largely excluded from this institutional study. The study therefore focuses on land resources (especially forest cover) and the conservation of soil. Figure 2.1.1 shows diagrammatically and partially the Central Government legislation relating to watershed management

2.2 Legal Protection of Watersheds

Three main areas of legislation govern or influence the protection of watersheds in Indonesia, dealing with (1) the management of forests, (2) regional administration in general, (3) the management of agriculture, (4) the harmonization / coordination of sectoral activities concerned with water resources conservation and utilization, and the control of water's destructive power. This chapter summarizes the main central government legislation in the four areas. Watershed management is only briefly mentioned in agricultural legislation, which must both (1) reflect and (2) give rise to a serious lack of emphasis on watershed conservation in agricultural practice. Provincial and local government legislation is referred to in Chapter 3 (on institutional framework of watershed management) where relevant, e.g. enabling legislation for Kabupaten Wonogiri Dinas LHKP. Legal issues are outlined in section 2.7.

2.3 Regulation and Management of Forests

2.3.1 Law No. 41 of 1999 on Forestry

This is the principal law governing the management of forests throughout Indonesia. It has been partially superseded by Law No. 19 of 2004 (see 2.3.2 below) in the matter of mining in protected forest. This activity was prohibited in Law No. 41/1999 (Article 38 Clause (4)) but allowed in Law No. 19/2004 in respect of 13 mining concessions awarded before 1999[2]. Law No. 41/1999 requires 18 Government Regulations for implementation. Of these, only 5 or possibly 6 have been issued to date, seven years after this important law was first issued. There appear to be no firm plans to draft and issue more GRs at this stage.

According to Law 41/1999, forests are under the State's control and are designated as either state forest or 'right' (or private) forest. Each forest type has three functions:

a) Conservation (conservation forest),
b) Protection (protection forest), and
c) Production (production forest) (Articles 4 and 6).

The Government therefore has the authority to:

d) Regulate and organize all aspects concerning forest, forest area and forest

[1] Land and soil management is often termed watershed management.
[2] In this controversial case, the Constitutional Court ruled that the principal of non-retroactivity should apply and therefore that 13 selected concessions (not all) should be allowed to proceed.

products,
(e) Assign a certain area as forest or non-forest,
(f) Determine and regulate legal relations between man and forest, and regulate legal actions concerning forestry (Article 4).

Further important stipulations are:

(i) Forest administration includes implementation of the following:
(a) Forestry planning,
(b) Forest management,
(c) Forestry R&D, education and training and extension, and
(d) Supervision (Article 10).

(ii) Forestry planning shall cover:
(a) Forest inventory,
(b) Forest gazettement and land use,
(c) Establishment of forest management area, and
(d) Preparation of forestry plans (Article 12).

(iii) Government shall stipulate and maintain adequate forest area and cover for each watershed, set at a minimum of 30% of total watershed area[3] (Article 18).

(iv) Protection forest can be used by granting business licenses for area utilization, environmental services and collection of non-timber forest products (Article 26).

(v) Production forest can be used by granting business licences for area utilization, environmental services, utilization of timber and non-timber forest products, and collection of timber and non-timber forest products (Article 28).

(vi) Right (or private) forest with protection and conservation functions can be utilized as long as this does not disturb those functions (Article 36).

(vii) Only production and protection forest can be developed for non-forestry purposes as long as the main function is not changed. Open cast mining is prohibited in protection forest, except under the provisions of Law No. 19 of 2004 (see paragraph 2.3.2 below) (Article 38).

(viii) Forest protection within State forest shall be undertaken by Government; within rights (non-State) forest shall be undertaken by the holder of rights (Article 48). To ensure this, a number of activities are specifically prohibited in Article 50, with specified penalties[4] for ignoring these provisions (Article 78).

(ix) Forestry education and training, and forestry extension to the community shall be implemented by government, the private sector and the community (Articles 55, 56).

(x) Forestry supervision (by Central and local Government, communities and individuals) shall be intended to observe, monitor and evaluate forest administration to achieve objectives, and to provide feedback for improvement of regulations concerning forest administration (Article 59, 60). [Note: feedback should also be used to improve the practice of forest administration. At least as important as the regulations is their observance.]

(xi) In administering forests, Government shall delegate some authorities to local government in order to improve efficiency in the framework of local autonomy (Article 66).

[3] In Wonogiri watershed, forest cover is estimated by Kabupaten Wonogiri at 11% of total.

[4] Up to a maximum of Rp.10 billion and 15 years prison (independently). It would be interesting to know what (if any) penalties have been imposed for the huge scale illegal logging, farmer encroachment and other criminal acts and violations of the law that have occurred since 1999 throughout Indonesia. As has been pointed out elsewhere, there is little point in having a legal structure which is so comprehensively ignored.

2.3.2 Law No. 19 of 2004 on the Stipulation of Revised Laws Government Regulation No. 1/2004 about changes on Law No. 41/1999 about Forestry

This law confirms GR No. 1/2004 in "clarifying" that Law No. 41/1999 does not apply retroactively to 13 selected concessions for opencast mining in a protection (protected) forest. The concessions should never have been awarded under an earlier flawed law. Various excuses have been thought up (and promoted by the media) to justify this vandalism and to avoid the expensive compensation needed to cancel the concessions. A sorry tale of incompetence and greed. On a more general point, have any legislators actually studied the legislation which is intended to protect the forested watersheds?

2.3.3 Law No. 18 of 2004 on Plantations [or Estate Crops]

Some important points of this law are:

(i) The plantation has a strategic role for national development; it should therefore be implemented, managed, protected and exploited in an open, professional and accountable manner for the economic improvement of the nation.
(ii) Plantation development must be sustainable.
(iii) There must be harmonious relationship and mutual benefit among plantation businessmen, community and other stakeholders.
(iv) There must be integrated plantation management in upstream and downstream regions.
(v) Plantation planning must take into account the national development plan, regional land use plans and similar. Also each Plantation enterprise must successfully undertake an Environmental Impact Assessment or Environmental Risk Assessment before implementation.
(vi) Plantation Corporations must obtain a license before implementation of the enterprise.
(vii) Sanctions and penalties are imposed for those who do not comply with plantation regulations.

2.3.4 Law No. 5 of 1990 on Conservation of Natural Resources and the Ecosystem

Some important points of this law are:

(i) The natural resources and ecosystem of the nation are all valuable and in many cases irreplaceable.
(ii) The base capital of these resources must be protected and conserved optimally for the welfare of the nation; this is an absolute obligation.
(iii) Irresponsible actions that destroy protection or conservation areas are treated with severe penalties of prison and fines.
(iv) Such protection and conservation are the responsibility of both government and community; government is therefore mandated to educate and motivate the community accordingly.
(v) This Law is urgently needed to ensure that the above is carried out.

It should be noted that this law was issued in 1990. *In the 16 years since then, there has been the most wholesale destruction of forest natural resources (including illegal logging nationwide) and the ecosystem in the nation's history.*

2.3.5 Government Regulation No. 6 of 1999 on Utilization of the Forest and Collecting Forest Output

This GR follows a number of laws dating from 1967 on forestry, environmental, ecological and other matters, including Law No. 5 of 1990 mentioned above, but excluding Law No. 41 of 1999. It applies apparently only to State forest. The main points include:

(i) The basic rule and goal is that forest utilization and collection of forest products should be based on the sustainability of the forest and balancing the good functioning of the ecosystem with its utility and justice for society.
(ii) An objective is to improve the existence and quality of forest resources that have high economic, social and ecological utility, and to guarantee that utilization and product collection are distributed fairly, especially to those living in and around the forest.
(iii) Rights to utilize the forest (i.e. utilization) and collect forest products can be obtained for natural forest and plantation forest.
(iv) Utilization in natural forest includes logging, replanting, maintenance, and marketing forest products. Utilization in plantation forest is the same but without logging.
(v) Rights may be obtained for utilization by bidding. Maximum holdings per company, group or individual are: 100,000 ha in a single province and 400,000 ha country-wide. Foreign companies can acquire rights for plantation forest but not for natural forest. The GR specifies: arrangements for bidding for rights, rights cancellation, rights for collection, and rights under traditional law.
(vi) Partnerships between rights owners and small enterprises to develop forest business are permitted.
(vii) Violations of the above stipulations invoke three types of sanction: cancellation of rights, reduction of work area, or an administrative penalty.

2.3.6 Government Regulation No. 34 of 2002 on Forest Arrangement, Forest Management and Planning, Utilization of Forest and Usage of Forest Area

This GR is said to be the most important for implementing Law No. 41/1999. The main points include:

(i) The Forest Management Plan must take into consideration the aspiration, participation and culture of the community, and the condition of the environment.
(ii) The GR defines the authority of Minister of Forestry, Provincial Governor, Head of Kabupaten or Kota in various forestry matters, including the following:
  (a) Issuing licenses for forest area use,
  (b) Issuing licenses for utilizing wood and non-wood forest products in natural and planted forests,
  (c) Collecting contributions from forest wood products and non-forest wood products.

2.3.7 Government Regulation No. 30 of 2003 on the Task and Authority of the State Forestry Company

This GR defines the work and authority of SFC, a 100% State-owned company, in forest management in its working area. State ownership is based on Law No. 9 of 1969. Forest management includes planning, utilization, rehabilitation, reclamation, protection and natural conservation (i.e. without interference by any public authority). The main points of the GR include the following:

(i) The working area of SFC Unit I Central Java is a part of the total working area of SFC which is: all State forest in Central Java, East Java (Unit II), and West Java provinces and the Province of Banten (Unit III), except the area of Conservation Forest. Smaller units are named Kesatuan Pemanguan Hutan (KPH).
(ii) The SFC was originally established under GR 15 of 1972, revised progressively by GR 2/1978, GR 36/1986, and GR 53/1999.
(iii) The SFC's objective is to allow public utilization and benefit based on SFC's management terms and on the sustainability of forest resources.

(iv) There are five members of SFC's board of directors with a managing director in charge. If the board membership is to be more than 5, the President has to approve based on a recommendation from the Minister of Finance.

2.3.8 Government Regulation No. 35 of 2002 on Regreening Fund

The Regreening Fund is to finance "Regreening" in natural forest. This consists of replanting forest trees and the rehabilitation of open, critical or damaged land, together with supporting activity, to revitalize the forest. The main points of the GR are:

(i) The Fund is financed by the owners of rights (usually companies) to utilize natural forest. The detailed procedure for this payment via the State Treasury is stipulated.
(ii) There are no similar regulations for privately owned forest.
(iii) Of the total regreening Fund, 40% is paid to local government, and 60% to central government, from where the funds pass via the Minister of Finance (for local government) and Minister of Forestry (for central government) to specific regreening projects. Again terms and conditions for the use of the funds are specified.
(iv) If, from monitoring, terms and conditions are not observed – for example, non-reporting of forest produce – sanctions can be applied according to regulation.
(v) If the owners of rights cannot pay, 3 warnings are given and then 30 days before the application of sanctions, according to regulation. This applies to utilization rights owners from private and State companies.

2.3.9 Ministry of Forestry Regulation No. 127/KPTS-II/2003 on the Management of Forest Product from the Work Area of the State Forest Company in Provinces of the Java Region

In GR No. 34 of 2002 it was stipulated that, to protect the rights of the State in forest conservation and forest products, implementation of forest management in Java region (particularly the protection forest and production forest the Provinces of Banten, West Java, Central Java, and East Java) has been delegated to BUMN, namely, the State Forestry Company (SFC).

This Ministry of Forestry Regulation stipulates the management of forest product from the SFC's work area in the Java Region. This includes:

(i) Specifying administrative procedures for: planning production and felling; measuring and numbering felled trees; in-forest transportation of forest product; reporting and documentation; other transportation of forest product.
(ii) Allocation and termination of staff in the various units of SFC in the Java Region.
(iii) Standardization of administrative procedures.
(iv) Fairly detailed reporting procedures within SFC units and to related units within the Ministry of Forestry.
(v) Audit of SFC's activities in managing forest product by the Ministry of Forestry assisted by provincial, kabupaten and city forestry services. These forestry services units should undertake any research necessary to provide a satisfactory audit.

2.4 Regulation and Management of Agriculture

2.4.1 Law No. 12 of 1992 on Crop Cultivation

The Ministry of Agriculture[5] considers this law to be the agricultural legislation closest to watershed management in an upstream catchment such as that of the Wonogiri Dam[6]. Unfortunately, a review of this law revealed only two relevant paragraphs; Article 44

[5] The Ministry's Legal Department.
[6] Earlier, the Study team was advised by the Ministry of Agriculture's Legal Department that Law No. 92 of 1996 or 1997 on Water and Land Conservation by the Small Farmer was the closest. However, no trace of this law could be found.

Clauses (1) and (2) which state:

"(1)The use of land for crop cultivation need follows the role of layout and land use based on the prevailing laws and regulations.

(2) Implementation of activities mentioned in Clause (1) is carried out by paying attention to the adjustment and capability of land as well as environmental conservation especially soil conservation."

This apparent lack of legal products relating to watershed management / conservation a very likely reason for the obviously appalling performance of farmers in the Wonogiri catchment and indeed elsewhere to prevent soil run-off.

2.5 National Movement for Partnership on Water Conservation (GN-KPA)

The legal basis for GN-KPA (see Chapter 3 Section 3.2.4 of this Annex 11 for a description of this initiative) is provided by MPW Regulation No. 377/PRT/M/2005 titled "Guidance for the Formulation of the Work Plan for Implementation of the National Movement for Partnership on Water Conservation".

In this regulation the National Movement for Partnership on Water Conservation (GN-KPA) is defined as: "[promoting] harmony of action from various sectors, areas and stakeholders on water resources management by sustainable water resources conservation[7], water resources utilization[8] and the control of water's destructive power[9].

Two schematics are provided to illustrate the need for and the scope of GN-KPA's responsibility (through the appropriate sectoral agencies). The first shows the present poor condition of water resources management and eight causes and effects of fluctuating water quality and "extremely disturbed hydrological balance" in watersheds. The second specifies seven countermeasures designed to improve the condition of water resources leading to good watershed management and sustainable development.

The regulation also stipulates (although briefly) guidance on work plan formulation which consists of (1) present condition of water resources management, (2) the GN-KPA objective, (3) its scope of work, (4) policy, strategy, programs and activity and (5) sources of funds.

2.6 Regional Administration

2.6.1 Law No. 22 of 1999 on Regional Administration

This law previously governed regional administration and replaced Law No. 5 of 1974. Relevant provisions include:

(i) Regional Authority covers the authority in all areas of government, *except* authority in the field of foreign policy, defense and security, judiciary, monetary and fiscal matters, religious matters, as well as authority in other fields (Article 7 Clause (1));

(ii) Authority in other fields, as referred to in Clause (1) above, covers the policy on national planning and national development control at the macro level, financial proportion fund, state administrative system and state economic institute, the building and empowerment of human resources, natural resources utilization as well as strategic high technology, conservation, and national standardization (Article 7

[7] Defined in this regulation as: "Effort to maintain existence and sustainability of condition, nature, and function of water resources, such that WR quantity and quality is appropriate to fulfill living needs, either currently or in future."
[8] Defined in this regulation as: "Effort on optimal water resources usage, supply, use, development and business."
[9] Defined in this regulation as: "Effort to avoid, mitigate and recover the damage to environmental quality, which is affected by water's destructive power."

Clause (3)).

(iii) The Authority of the Province as Autonomous Region shall cover the authority in the field of administration which crosses Regency [Kabupaten] and Kota boundaries, and the authority in other specified fields of administration (Article 9 Clause (1).

2.6.2 Law No. 32 of 2004 on Regional Autonomy

In September 2004, DPR[10] decisively approved the revision of Law No.22 of 1999 by Law No. 32 of 2004 signed by the outgoing President, to include the following changes:

(i) Direct election of heads of regional government agencies (provinces, kabupaten and kota);

(ii) Central Government can dismiss such officials in case of corruption or other acts deemed to be a threat to national security;

(iii) A number of other changes to limit the powers of kabupaten and kota. In particular, regional leaders will not be allowed to issue regulations that contradict Central Government policy.

2.6.3 Law No. 25 of 1999 on the Financial Proportion between Central and Regional Governments

This law previously governed the financial proportion and its management between central government and the regional administration. Specific relevant provisions include:

(i) The implementation of Central Government tasks by provincial Government in the framework of *deconcentration*[11] and *assistance*[12] is funded by national budget. (Article 2 Clauses (2) and (3));

(ii) Sources of Regional revenue in the implementation of *decentralization*[13] shall be: (a) Regional Original Revenue; (b) Proportional Fund; (c) Regional Loan; (d) Miscellaneous Legal Receipts (Article 3);

(iii) The allocation of state receipts to the regions is specified for various sectors in Articles 6 to 10.

2.6.4 Law No. 33 of 2004 on Intergovernmental Fiscal Balance

Also in September 2004, DPR passed a new Intergovernmental Fiscal Balance Law, Law No. 33 of 2004, to replace Law No. 25 of 1999. Key points of the revised law include:

(i) Some increase in the amount of property and property transfer taxes paid from CG to provinces and local administrations;

(ii) A small increase in oil and gas revenues received by CG paid from CG to producing provinces and local administrations (some oil and gas producing provinces have complained of inadequate increases);

(iii) Provinces may issue bonds after MOF and DPRD approval, but CG will not guarantee these.

2.6.5 Government Regulation No. 25 of 2000 on Autonomy and Decentralization

This government regulation, based on Law No. 22/1999, is intended to define central government authority and regional authority as autonomous region, and thereby the residual authority of kabupaten and municipalities. However, for this regulation to be effective, additional legislation (e.g. government and provincial regulations and guidelines) is required, as well as further training and development for those in local government. Relevant provisions include:

[10] House of Representatives.
[11] The delegation of authority from central government to the provincial governor as representative of the government.
[12] Specific tasks assigned by government to the autonomous region with required finance.
[13] The delegation of authority by government to the autonomous region

(i) Provincial Authority as the autonomous region shall cover the authority in the field of government administration which crosses or covers two or more kabupaten / municipalities….(Article 3 Clause (1));
(ii) Besides the authority referred to in Article 3 Clause (1) if minimal services should be performed by a kabupaten / municipality, the province may conduct the authority which is not and has not been performed by the kabupaten / municipality. (Article 3 Clause (3));
(iii) If the province cannot perform the authority referred to in Article 3 Clause (3), the province shall delegate this authority to the Government (Article 4, Paragraph (i);
(iv) Authority of kabupaten / municipality in a certain field and certain part of obligatory authority may be performed by the Province according to the agreement between the kabupaten / municipality and the Province (Article 3 Clause (4)).
Later sections comment on the current and future effect of this legislation at national, provincial, river basin and kabupaten / municipality levels of government.

With the overdue revision of Law No. 22 of 1999 reported above, this GR will also have to be revised. It is hoped that this revision will correct some of the deficiencies of the present GR.

2.6.6 Government Regulation No. 8 of 2003 on the Organizational Structure of Regional Government

This GR is an update of GR No. 84/2000 which was issued as a general guideline to implement Law No. 22/1999. While there are some improvements in GR No. 8/2003, a significant weakness remains, namely a uniform grading structure for all regional government positions regardless of the size, scope and complexity of the work of particular dinas. Thus, officials in a large kabupaten or kota would be paid the same as officials at the same level in small kabupaten. A revision is needed since the replacement of Law No. 22/1999 by Law 32/2004. Any remaining weaknesses should be corrected when the GR is revised.

2.7 Legal Issues Concerning Watershed Management

(i) An apparent lack of any significant agricultural legislation dealing with watershed conservation. This serious omission should remedied as a matter of urgency, and steps taken to ensure that issued legal products are enforced.
(ii) Lack of GRs to implement the law – for example, Law 41/1999 has only 5 or 6 GRs issued from the 18 required by the law.
(iii) Little or no imposition of penalties for infringements.
(iv) Further to (iii) above, there has been and still is a comprehensive lack of enforcement of the law generally, and especially in watershed conservation. The provisions of two key laws, the Forestry Law (Law No. 41/1999) and Law No. 5/1990 in particular have been ignored for years. Some serious examples concern open cast mining in protected forests. In one case mentioned in Section 2.3.2 above, a special law (Law No. 19/2004) was passed to allow 13 earlier concessions for open cast mining to proceed in a protected forest, to "encourage investment". The second case is current and concerns the Batang Gadis National Park, North Sumatra. It appears that the Governor of North Sumatra is pushing hard (with visits to Australia) for an Australian mining company to embark on a gold and silver mining project in the South Tapanuli regency. This project is not only contrary to Law No. 41/1999 but is against the wishes of the local people who have protested strongly about this and other illegal activities in the park.

(v) Regional Autonomy Law No. 22/1999 has been replaced by Law No. 32/2004. But GR No. 25/2000 which was the main regulation implementing Law No. 22/1999 has not been updated or replaced. Such revision is long overdue.

(vi) GN-KPA's responsibility should be limited to assisting the coordination and enhancement (if necessary) of the activities of sectoral agencies responsible for WR conservation, utilization and destructive power control. It should not, in any way, take over the work of the sectoral agencies.

CHAPTER 3 INITIAL ASSESSMENT OF INSTITUTIONAL FRAMEWORK FOR WATERSHED MANAGEMENT

3.1 Introduction

This chapter outlines the recommended organizational setup for managing the Wonogiri watershed (DAS Wonogiri). It also summarizes the current institutional issues relating to watershed management in the Wonogiri catchment as well as recommendations for remedial action. While watershed management directly affects the development of water resources and flood control, the in-stream management of water resources is not a major influence on the quality of watersheds or the sedimentation of Wonogiri dam and is therefore largely excluded from this institutional study. However, the management of in-stream and green belt erosion is considered. In addition, a coordination mechanism is recommended that is multi-sectoral and includes water resource management with watershed management.

A procedure for funding some costs of Wonogiri watershed management from downstream beneficiaries of the Wonogiri dam is suggested in Chapter 4 of this annex. A map of Central Java Province indicating watershed and kabupaten boundaries is shown in Figure 3.1.1.

3.2 Organizational Setup for Watershed Management

Sections 3.3 to 3.5 below outline the organization needed for sustainable management of the Wonogiri watershed. They also suggest actions needed to further build capacity in Kabupaten Wonogiri's forestry and agriculture services.

3.2.1 Preamble

For successful watershed management (WM), all user groups and representatives of administrative territories included within the watershed should be involved in management. Management decisions affecting the watershed should, where possible, be made through consensus between these user groups and stakeholders. Accurate and reliable information systems to provide regular updates on the condition of the watershed, together with community education programs to promote understanding of watershed management strategies are vitally important.

These prerequisites should be encouraged by forming multi-sectoral watershed management/conservation committees to coordinate the various aspects of WM. In the interest of integrated management, WM should be combined with water resources management (WRM), although WM depends only slightly on the quality of WRM. The risk of integration is that WM will be sidelined by the greater pressure to develop WR. This matter is discussed further in Sub-section 3.3.8.

3.2.2 Decentralization and *Otonomi Daerah*

The partial implementation of the *otonomi daerah (OD)* legislation has decentralized the management and funding of watershed management to provinces and, especially, to kabupaten/kota. The role of central and provincial governments is now (or should be) limited mainly to policy-making and standards development, and providing technical and financial assistance on demand. The exception to this is (i) the execution of trans-kabupaten/kota tasks by provincial technical implementation units (TIUs or UPTDs) and (ii) the execution of trans-province tasks as arranged by Central Government (CG) agencies. Item (ii) may well be carried out by provincial TIUs with agreement of CG. In

forest and agricultural management these TIUs are known as Balai. See Sub-section 3.2.3 below for more on this subject, including the recently introduced Balai Besar Wilayah Sungai (River Basin Institute) and Balai Wilayah Sungai (River Basin Agency).

Three types of organization are involved, directly or indirectly, in watershed management. Local government agencies are placed first in view of their intended importance in executing policies and implementing *otonomi daerah (OD)*:

a) Local government agencies,
b) Provincial and other regional government agencies,
c) Central government agencies,

in two main sectors, forestry and agriculture. The present organizational framework for watershed conservation is shown in Figure 3.2.1 below:

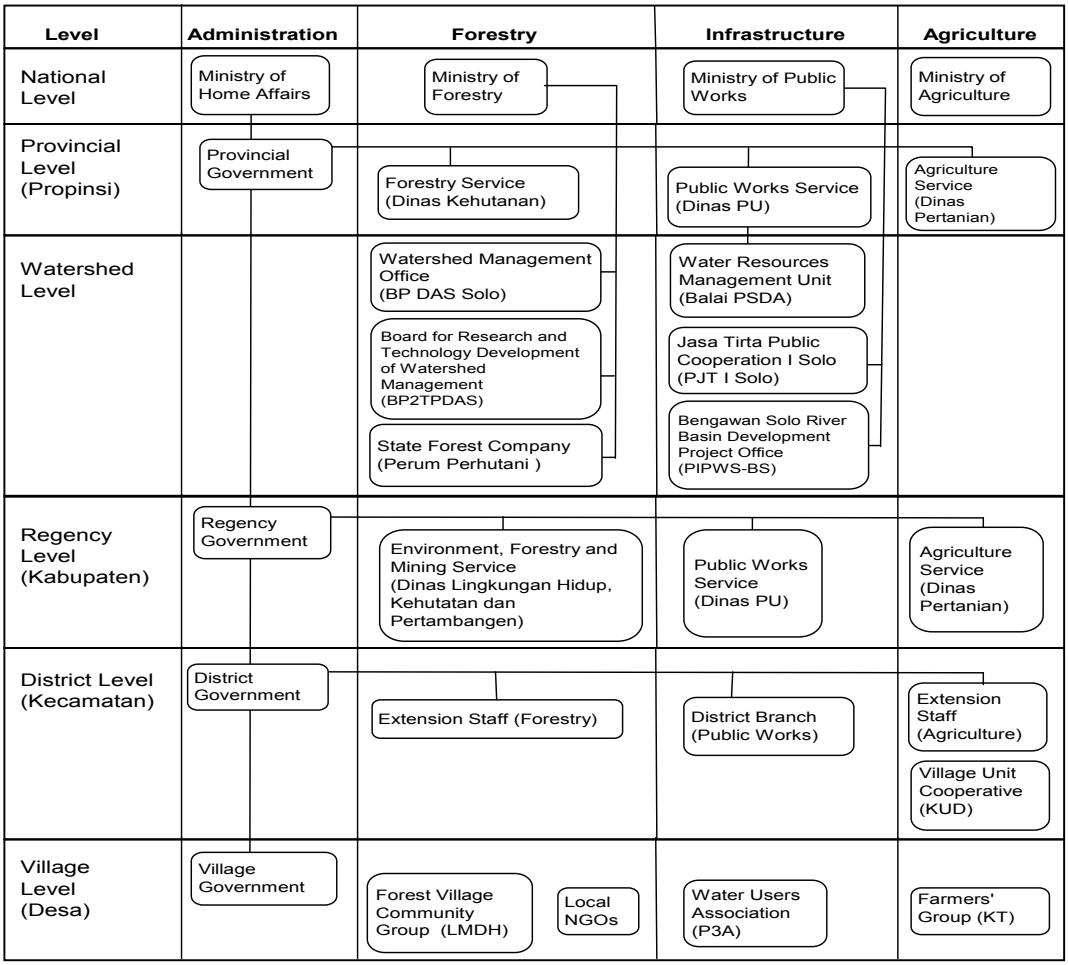


Figure 3.2.1 Present Organizational Framework for Watershed Conservation

3.2.3 Balai Besar Wilayah Sungai at State and Lower levels of Government

(1) Background

During 2006 GOI (principally MPW and Ministry of PAN[14]) decided to consolidate several WRM implementing organizations, including river basin development projects, flood control and coastal protection projects and Jasa Tirta Public Corporations (PJTs), into one WR managing institution for each major river basin[15]. Such institutions would

[14] Ministry for Control of the Machinery of State / Menteri Pendayagunaan Aparatur Negara
[15] This arrangement, when implemented, would satisfy the desirable "One River basin, One Management" requirement.

be known as Balai Besar Wilayah Sungai (BBWS – River basin Institutes[16]). Similar institutions for smaller less developed river basins would be known as Balai Wilayah Sungai (BWS – River Basin Agencies[3]). As Central Government Technical Implementation Units they would have two missions: O&M and development. An alternative arrangement would be for PJTs alone to be responsible for WRM in major river basins. The decision to opt for BBWS was apparently made with the help of a simple matrix, reproduced in the table below:

Table 3.2.1 Assessment of Water Resources Management by PJT and BBWS

Alternative 1 Water Resources Management only by PJT	Alternative 2 Water Resources Management only by Balai Besar Wilayah Sungai
Strengths: 1. The institution already established 2. Personnel already available in sufficient quantity with experience as the water resources service provider 3. Sufficient equipment available 4. Revenue already being collected	Strengths: 1. Sufficient personnel available with experience, especially as the implementer for water resources infrastructure development 2. Sufficient equipment available
Weaknesses: 1. O&M of water resources facilities will perform poorly due to lack of funds (collected as revenues) that cannot automatically be covered by national budget (prohibited by Law 19/2003 on State-owned Enterprises, Article 4, Clauses 3 and 4). 2. PJT cannot implement development work except specified tasks in urgent situations	Weaknesses: 1. The institution has not been established [Since this matrix was produced, Minister of PAN has approved the establishment of BBWS and BWS) 2. Readiness of personnel to perform the public service still limited and needs improvement 3 Revenue can only be collected by a Balai together with a PNBP[17] unit
Effort Needed to Overcome Weaknesses: 1. Revise Law No. 19/2004 so than PJT may receive the remaining O&M funds (to meet the shortfall of collected revenue versus original budget) and funds from the national budget for implementing planned development.	Effort Needed to Overcome Weaknesses: 1. Ex staff of PJT and SNVT should be acquired so that the development and O&M missions can be implemented 2. Training programs for personnel are required so that they are ready to perform the tasks and functions of the Balai 3. A PNBP unit should be established in the Balai to collect revenue

Source: DGWR

Currently, under the TOR-7 component of the PJT I O&M strengthening project in Malang, these two options are being re-examined (as required by DGWR and PJT I), along with a third option for the Brantas and Bengawan Solo river basins, namely, BBWS operating together with PJT I for the longer term. The final outcome of this exercise should be known by the end of March 2007. Initial findings suggest that BBWS operating together with the existing PJT I is a better option than BBWS on its own.

(2) Structure

The organization and management of Balai Besar Wilayah Sungai (BBWS – [large] river basin institutes) is set out in MPW Regulation No. 12/PRT/M/2006, although there is little on the subject of management and relations with other WRM bodies or other parts of

[16] These names for "Balai" are unofficial and may be temporary.
[17] Pendapatan Negara Bukan Pajak = Non-tax State Revenue

DGWR. The BBWS is a technical implementation unit (TIU) under and reporting to the DGWR through the Directorate of Rivers, Lakes and Dams. It is responsible for implementing water resources management (WRM) in major river basins. This work includes "planning, implementation of construction, operation and maintenance in the framework of conservation of water resources, development of water resources, efficiency of water resources, and control of water disaster"[18] in a river basin.

Two sizes of BBWS are envisaged. The larger Type A BBWS is as shown in Figure 3.2.2 (conventional organization structure) and in Figure 3.2.3 below (distribution of national, provincial and kabuapten TIUs[19] plus assistance arrangements between levels). The Type A BBWS comprises divisions for programming and evaluation, implementation of WR network (with a river & coast section; swamp & reservoir section), implementation of water use network (with an irrigation section; raw water section), and operation and maintenance (with sections for O&M of WR; data and information). There are the usual administration unit and expert group. The Type B BBWS is aimed at the smaller major basin, and lacks a separate programming and evaluation division, although the function is retained in the administration unit. MPW Regulation No. 12/PRT/M/2006 envisaged five Type A BBWS[20] and one Type B BBWS[21]. However, this distribution was recently (November 2007) amended by DGWR to 8 Type A BBWS and 3 Type B BBWS[22].

River basins selected for management by BBWS Types A and B are more developed and have previously established WR development projects. These are planned to be absorbed into the BBWS structure, specifically into the WR and Water Use Network divisions.

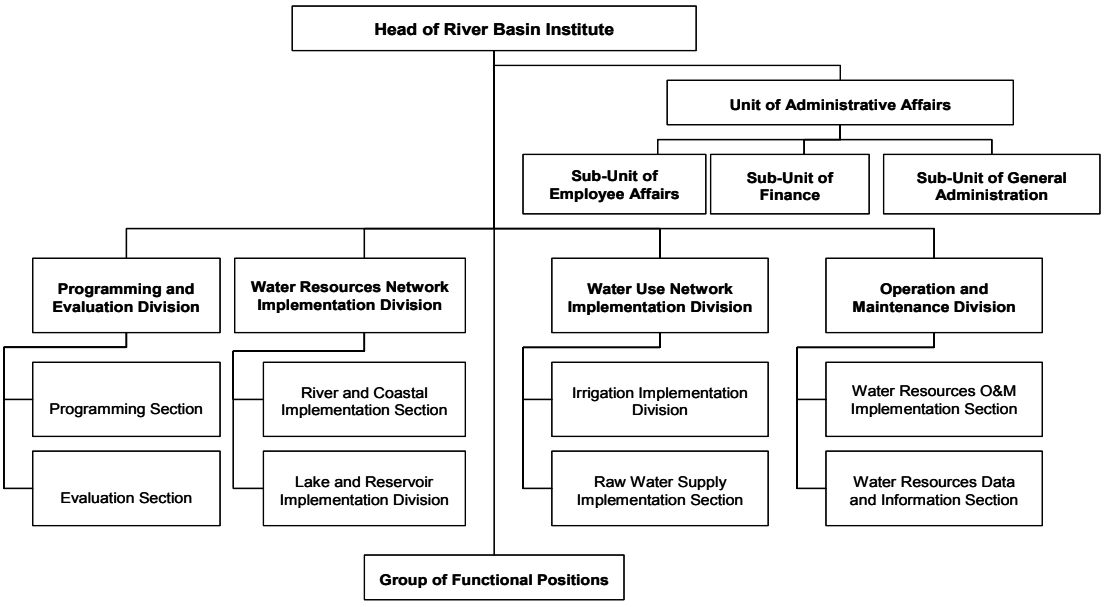
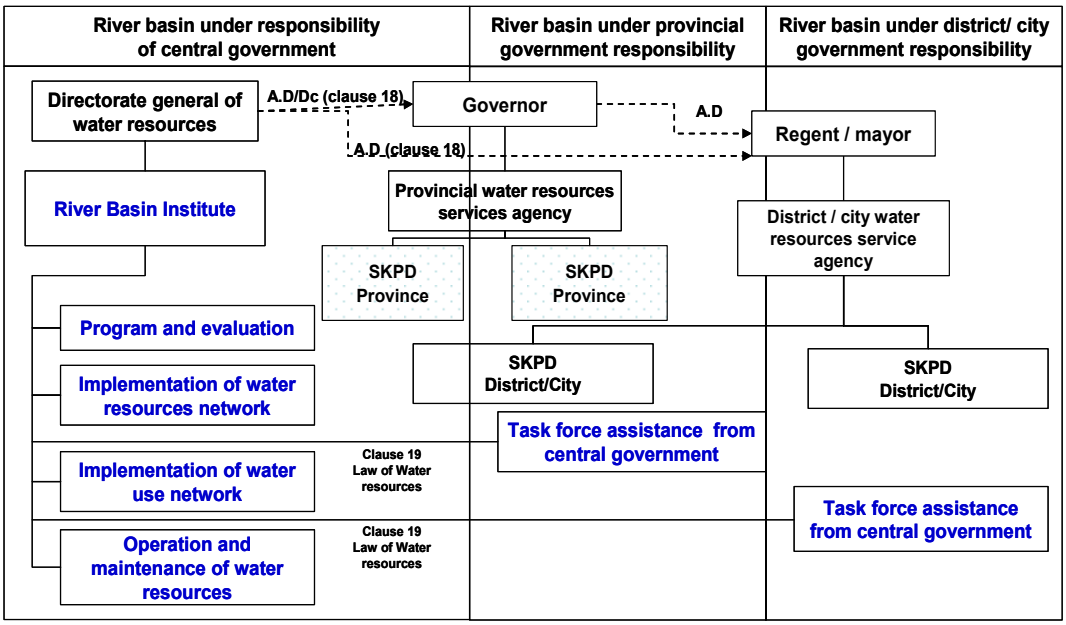


Figure 3.2.2 Balai Besar Wilayah Sungai (River Basin Institute) Type A

[18] MPW Regulation No. 12/PRT/M/2006
[19] Technical implementation units for DGWR, provincial WR services and district WR services, respectively.
[20] In the following river basins: Brantas; Bengawan Solo; Pemali-Comal & Jratunseluna; Serayu-Bogowonto & Progo-Opak-Serang; Cimanuk-Cisanggarung.
[21] In Citanduy river basin
[22] In the following additional river basins: Type A: Pompengan-Jeneberang, Citarum, Mesuji-Sekampung; and Type B: Ciliwung-Cisadane, Cidianau-Ciujung, Cidurian.



Notes: The status of Technical Implementation Unit (UPT) in each central, provincial and kabupaten/kota (district/city) government is:
(1) Provincial Govt Working Unit (SKPD Prov.) is UPT under Provincial Water Resources Services with its working area in the related river basin. For example, the working area of SKPD Porong is in the Porong River basin
(2) Kabupaten/Kota Government Working Unit (SKPD Kab./Kot.) is UPT under Kabupaten/Kota Water Resources Services with its working area in the related river basin.
Abbreviations: A.D. = Assistance Task; Dc = deconcentration; Clauses are from the WR Law 7/2004

Source: DGWR

Figure 3.2.3 Balai Besar Wilayah Sungai in Government WRM Structure

The WR management of smaller less developed river basins is to be undertaken by Balai Wilayah Sungai (BWS – River Basin Agency) which would operate in the same way as the BBWS but with fewer functions. As for the BBWS, and according to MPW Regulation No. 13/PRT/M/2006 (enacted in July 2006), the BWS would implement WRM (including planning, implementing construction, and O&M, in the framework of WR conservation, efficiency and disaster management in its allocated smaller river basin. There would be two levels of BWS, A and B, the A level of BWS having the higher functionality. The above MPW regulation envisages 17 A-level BWS in 17 different locations (recently amended to 13) and seven B-level BWS, throughout Indonesia.

Figure 3.2.3 shows that TIUs at national and provincial levels can provide assistance to provincial and kabupaten WR services, if requested. In addition, provincial and kabupaten WR services can undertake tasks (if they agree) for national[23] and provincial governments respectively, for which they would be compensated financially.

(3) Implementation

It is expected that MPW will begin to implement the new structure in 2007, after completing the necessary budgeting procedure and providing an explanation to the concerned local governments from October to December 2006. Senior staff at echelons 2 and 3 have already been appointed to BBWS and BWS throughout Indonesia via MPW decrees numbered 384/2006, 385/2006 and 386/2006 issued in November 2006.

The TOR-7 consultants understand that, in the longer term, MPW intends to absorb PJT I into BBWS Brantas and BBWS Bengawan Solo. Similar arrangements are planned for PJT II[24]. During an initial period, probably at least three years, BBWSs would work in

[23] Via deconcentration from national level to provincial governor.
[24] The final outcome in Citarum river basin would be different due to PJT II's ownership of certain facilities including PLTA and water treatment.

parallel with the two PJT corporations, while absorbing projects and taking over some O&M work. However, at the request of DGWR and PJT I, as mentioned in Sub-section 3.2.3 (1) above, TOR-7 consultants are currently undertaking an appraisal of the three options for WRM in Brantas and Bengawan Solo river basins (BBWS alone, PJT I alone, BBWS jointly with PJT I). This is despite the fact that BBWS is already established (if not yet functioning) in 11 river basins nationwide.

(4) Comment

Having assisted with the design, establishment and operation of PJTs for a number of years, the Study team feels obliged to make the following points in favor of PJTs having sole responsibility for WRM in major river basins; these points will be taken into account in the evaluation of the three WRM options now being assessed in TOR-7:

(i) Why reverse (at significant cost) the reasonably successful and cost-effective corporatization of O&M of major river basins rather than extend the powers of existing PJTs (which could be relatively easily done)?

(ii) It is normal practice for SOEs that cannot fully match budgeted expenditure with collected revenue (often because of government policy on capping or scrapping tariffs) to be reimbursed the shortfall by national or regional government. There should be no excuse for substandard O&M because of existing legislation. Laws can be changed.

(iii) Furthermore, the scope of PJTs could be extended to include the design and implementation of development projects. In any case, private contractors are often used by government departments for design and construction in major development work.

(iv) In many countries, the trend is now towards increased rather than decreased corporatization, private sector participation and competition, in order to reduce unit costs and government cost overall, and to improve budgetary control, accountability and efficiency.

(v) On a point of law, and specifically SOE Law No. 19/2003 concerning the provision of State funds to SOEs, it is arguable that Article 4 Clause 4 refers to the capital structure of the SOE and not operating funds. Moreover, it seems likely that SOEs in other sectors have received State funds to help defray operating expenses without the need for a Government Regulation.

3.2.4 National Movement for Partnership on Water Conservation (GN-KPA[25])

(1) Background

This "movement" was launched by the GOI President on 28 April 2005 in response to a general perception that water resources overall are in a critical state and that this is worsening poverty and food shortages, as well as inhibiting the nation's economic, social and cultural development.

(2) Objective

The stated objective[26] of GN-KPA is to rebalance the hydrological cycle at the watershed so that the quantity and quality of water resources may be controlled by governmental empowerment, the private sector and the community, also through enforcement of the law

[25] Gerakan Nasional Kemitraan Penyelamatan Air

[26] This objective (from MPW Regulation No. 377/PRT/M/2005) seems too technical and abstract, and therefore difficult to translate into verifiable action by the parties mentioned. The GN-KPA objective should surely be to achieve improved watershed management and WR quantity and quality through better coordination of sectoral agencies (carrying out their existing remits) in order to achieve their objectives If GN-KPA concludes that changes in such remits or objectives are needed, these should be recommended separately to GOI for assessment and possible implementation.

(see Chapter 2 section 2.7 for legal issues).

(3) Legal Basis

The legal basis for GN-KPA is Ministry of Public Works Regulation No. 377/PRT/M/2005 on Guidance for the Work Plan on Implementation of the National Movement for Partnership on Water Conservation. (See Chapter 2 Section 2.5)

(4) Organization Structure of GN-KPA at National level

The intended structure of GN-KPA is shown diagrammatically at national level in the figure below:

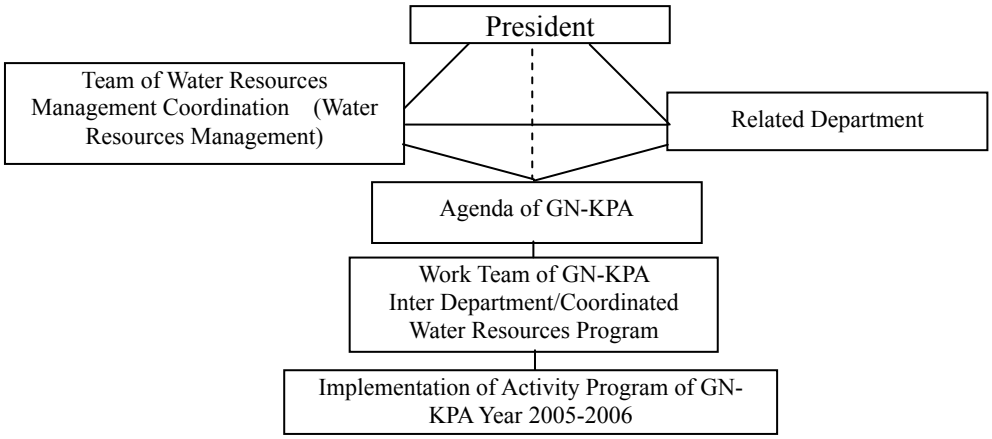


Figure 3.2.4 Organization Structure of GN-KPA at National Level

(5) Organization Structure of GN-KPA at Province, City, Kabupaten and River basin level

The intended structure of GN-KPA at the above levels is shown in the figure below:

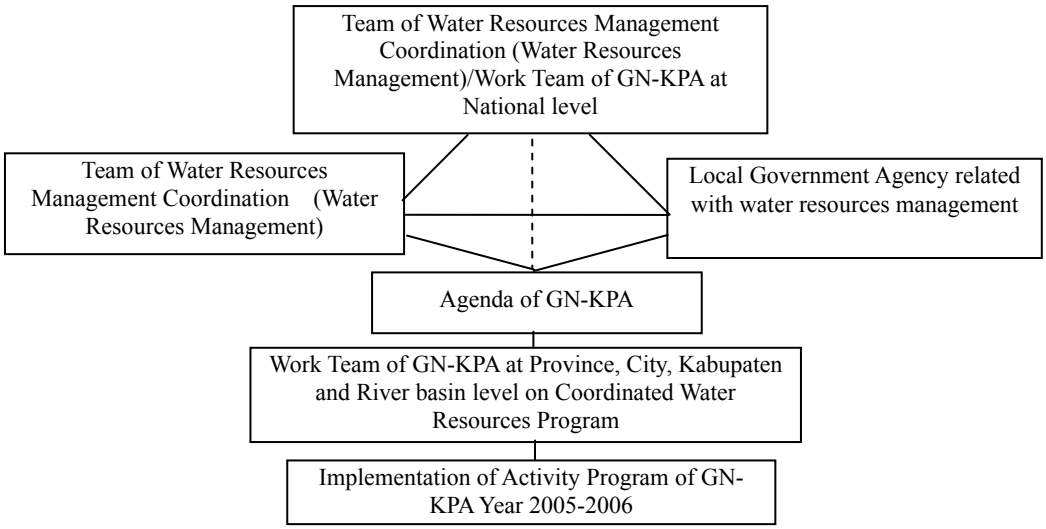


Figure 3.2.5 Organization Structure of GN-KPA at Province, City, Kabupaten and River Basin Level

It is assumed that the "water resources management" terms above include the watershed management function. If so, for clarity this should be stated on the diagram.

(6) Stakeholder Functions

The main functions of each stakeholder are given in the following table:

Table 3.2.2 Stakeholder Functions in Water Conservation

	Stakeholder	Main Functions
1	Ministry of Public Works	Site plan, civil technique, water management and demand, water resources conservation
2	Ministry of Forestry	Forest and land conservation
3	Ministry of Agriculture	Management of land and water, irrigation water usage saving
4	Ministry of Energy and Mineral Resources	Controlling the quantity and quality of ground water[27]
5	State Ministry of Environment	Management of water quality and control of water pollution
6	Ministry of Home Affairs	Institutional procedure
7	Local Government	Law enforcement[28]; Local Government Income and Expenditure Budget
8	NGOs	Participation

Source: GN-KPA Work Team

(7) Policy

Government policy for GN-KPA is stated as follows:

- Coordinated implementation of the six activity components of GN-KPA which are stated as:
  - Site plan, structural construction, land and demography,
  - Forest and land rehabilitation, and water resources conservation,
  - Control of water damage,
  - Management of quality and control of water pollution,
  - Saving water usage and management of water demand,
  - Fair, efficient and sustainable water resources development.
- Involvement of all stakeholders with interests in water resources,
- Covering social, economic, cultural, health and environmental dimensions,
- Implementing the principles of good and effective water and environmental governance,
- Utilizing the value and price of water in order to attain justice, efficiency and water sustainability.

(8) Strategy

Government strategy for GN-KPA is stated as follows:

- Formulate the Long Term Plan for 2000-2005 in a coordinated fashion and relate to the six activity components of GN-KPA (see (7) above),
- Coordinate the skill and ability of all stakeholders with interest in water resources,
- Give priority to critical river basins,
- Conduct monitoring and evaluation by open, accountable and sustainable means

(9) Budget

Funding is planned from the following sources, although no amounts have yet been

[27] It is strongly recommended that, in line with previous reports (including those of Watsal), the control of ground water should be transferred to MPW from MEMR. This is according to best international practice and also Law No. 7 of 2004 (Article 11 Clause 2).
[28] Law enforcement is an area generally requiring immediate and extreme vigilance.

quoted:

- APBN and APBD,
- Private sector and community participation,
- Grants from national and international institutions.

(10) Programs

Programs are planned in three time frames:

- Short Term (Year 2005 – 2006)
- Medium Term (Year 2005 – 2009)
- Long Term (Year 2005 – 2025)

(11) Implementation

By the end of 2006, two regional meetings, important for different reasons, had been held: a 3-day meeting in Makassar, South Sulawesi in June 2006, the second a one-day event in Wonogiri, Central Jawa in December 2006.

The Makassar meeting focused on the O&M of water resources facilities in Area III in South Sulawesi Province[29]. Attendees included Governor of South Sulawesi Province and representatives from the Directorate General of Regional Development (Ministry of Home Affairs) and the Directorate General of Water Resources (Ministry of Public Works). Presentations were made by representatives from Central Government, Local Government, a University and NGOs. The meeting was largely a statement of problems and aspirations in this area, and suggested clearly that (a) better sectoral management and (b) better coordination of interdepartmental effort was needed. There seemed to be little promotion of or discussion on GN-KPA. According to the meeting minutes, the following topics were discussed:

- Review of current problems and a follow up of implementation program on O&M of water resources structures and facilities;
- Institutional matters concerning management of irrigation, swamps and rivers;
- Infrastructure, O&M of Water Resources Structures and Facilities, and Budget (AKNOP, APBD, APBN Deconcentration, DAU, DAK, and Community Fund);
- Review of regulations and policy on water resources section.
- Need to formulate policy and strategy on O&M of water resources structures for 2007, which will be added to The Work Planning of Local Government Development (RKPD).
- A project in West Kalimantan Province was formulated to (a) evaluate O&M of WR structures and facilities for 2006, (b) follow up the evaluation and (c) arrange a program of O&M of WR structures and facilities for 2008. This proposal suggests that existing O&M efforts are far from adequate, and that to implement the needed improvements will be a lengthy and costly exercise.

The Wonogiri meeting consisted of an explanation, promotion and discussion on GN-KPA as it might apply in Kabupaten Wonogiri. About 60 attendees included representatives from relevant national, provincial and kabupaten level agencies in addition to a NGO and the GN-KPA national inter-departmental work team. According to meeting minutes, matters agreed during the meeting included:

- Three components of GN-KPA (forest and land rehabilitation; water resources

[29] Source: Minutes of Meeting

conservation; community empowerment) would be initially implemented in the Keduang sub-watershed at 9 villages in five kecamatan, all in Kabupaten Wonogiri upstream of the Wonogiri dam. These were locations considered most in need of conservation activity.

- A GN-KPA team would be established in Kabupaten Wonogiri consisting of seven members from BAPPEDA (2 members including the team leader), forestry service, public works service, agriculture service, industrial trade service**,** and PERSEPSI.
- A program of countermeasures will be arranged by the Ministries of Forestry and Agriculture and the DGWR. The Government of Central Java Province and Kabupaten Wonogiri will be coordinated by the secretariat of interdepartmental GN-KPA in parallel with the GN-KPA Team of Central Java Province.
- The Center for Research and Development of Socio Economy, Culture and Community Participation together with the GN-KPA Team of Kabupaten Wonogiri, will coordinate arrangement of materials and preparation of training for the candidate facilitators, supervisors, and motivators for empowerment as development stakeholders on GN-KPA implementation in the Bengawan Solo watershed, Keduang Sub Watershed, Kabupaten Wonogiri, Central Java Province, for fiscal year 2007 and facilitated by PBS and PJT I Bengawan Solo.
- Wonogiri BAPPEDA will provide necessary logistical and administrative support.
- Preparation committee of GN-KPA Team on Kabupaten Wonogiri level will be followed by establishment of GN-KPA at Kabupaten Wonogiri level on December 2006 by a Bupati decree.
- According to a letter from Minister of Public Works on implementation of GN-KPAs at Province, Kabupaten/Kota and sub-watershed levels, and a letter from Minister of Home Affairs about O&M of water resource structures, Provincial, Kabupaten/Kota governments should implement GN-KPA using APBD budget of Province, Kabupaten and Kota, and share the APBN for Department of Public Works, starting 2006 until 2009.
- The GN-KPA program of work should be implemented by appropriate sectoral agencies coordinated by the secretariat of GN-KPA inter-departmental Team and the GN-KPA Team of Kabupaten Wonogiri, also facilitated by PBS and PJT I Bengawan Solo.

(12) Issues

These issues are preliminary and from a relatively brief assessment of GN-KPA.

- GN-KPA objectives, policy and strategy should reinforce and be consistent with those of the relevant sectoral agencies. Nowhere is this stated in GN-KPA documents or indeed in Ministry of Public Works Regulation No. 377/PRT/M/2005. It follows that GN-KPA should not be able impose tasks and activities that are not part of the relevant sectoral agency's responsibility.

1• It follows that GN-KPA teams should only engage in multi-sectoral projects that individual sector agencies cannot do by themselves.

3.3 Local Government Agencies

Kabupaten Wonogiri covers a total area of 182,236 ha, of which 21,012 ha is State forest land, and 27,133 ha is community forest land.[30]

[30] Statistics supplied by Wonogiri Sub Dinas Forestry

Local government agencies with specific responsibilities for watershed protection include (i) Environment, Forestry and Mining Services of Kabupaten Wonogiri, (ii) Agricultural Services of Kabupaten Wonogiri, (iii) NGOs, and (iv) farmer groups and other community organizations.

3.3.1 Dinas Lingkungan Hidup, Kehutanan dan Pertambangan (Dinas LHKP) (Environment, Forestry and Mining Services of Kabupaten Wonogiri)

(1) Introduction

Kabupaten Dinas LHKP is the implementing agency for environmental, forestry and mining management in Kabupaten Wonogiri.

This report section, however, will concentrate mostly on forestry, which is the task of Sub Dinas Forestry and a main focus of this part of the Study.

(2) Vision and Mission

(i) The vision is stated in the Dinas LHKP Renstra (Medium Term Plan) for 2002 to 2005, as follows: To develop an awareness and institutions in society towards environmental preservation, forest management, soil conservation and environmental mine management.

(ii) The mission is given in the same document as:

(a) To develop an awareness and institutions in society to preserve and bequeath good environmental conditions for the next generation.

(b) To develop a responsibility in society and its institutions in conserving natural resources, repairing natural / environmental damage (through land rehabilitation and soil conservation, reclamation of disused mining land), and protecting flora and fauna, as well as by supervising the distribution of forest production.

(c) To find, develop, and use technologies with low energy, are environmentally friendly, and which preserve the ecosystem.

(d) To improve the management of mining and groundwater following the principle of efficiency, equality, and consideration for the environment.

The stated Vision of this Dinas LHKP deals with the required state of mind of the community and its institutions. While useful as a means to an end, the Vision should focus on the required sustainable state and preservation of forests themselves. The kabupaten dinas, as implementer and monitor, should concentrate on the state of the forests as an end product, and the Vision should express this.

The Mission should focus purely on implementing the Vision and not be too detailed. This it does quite well, for forests, the environment, and mining.

(3) Reporting Arrangements, Organization Structure and Staffing

The Head of Dinas LHKP primarily reports to the Kabupaten Head (Bupati)[31], as the Kabupaten has now a considerable degree of autonomy. However, the Dinas LHKP has to comply with all central government policy and standards (especially since the issuance of Law 32/2004 on Regional Autonomy**)** in its three functional areas. It also reports direct to the Ministry of Forestry on the use of APBN funds, mainly provided under the Gerhan[32]

[31] Bupati reports to DPRD, the Kabupaten Wonogiri House of Representatives, on the plans and activities of Kabupaten Government, and to Ministry of Home Affairs for coordination, major expenditure, etc.

[32] The National Movement for Forest and Land Rehabilitation (Gerakan Nasional Rehabilitasi Hutan dan Lahan (GN-RHL; Gerhan)) was enacted in March 2003 through joint decrees by Coordinating Ministers for: 1) Public Welfare; 2) Economy; and 3) Policy and Security. GN-RHL is a five-year program to conserve major watersheds nationwide, via comprehensive conservation programs in social forestry and construction.

program of CG assistance.

Dinas LHKP has no direct responsibility for subordinate agencies or projects. It is, however, responsible for forestry work undertaken in each of the 25 kecamatan in Kabupaten Wonogiri by 2 or 3 sub dinas staff (including a coordinator) that report to the head of Dinas LHKP (see immediately below for more detail).

The latest organization structure appears in Figure 3.3.1 below, and consists of three sub dinas for forestry, environment and mining. Total staffing amounts to 126 for the whole Dinas.

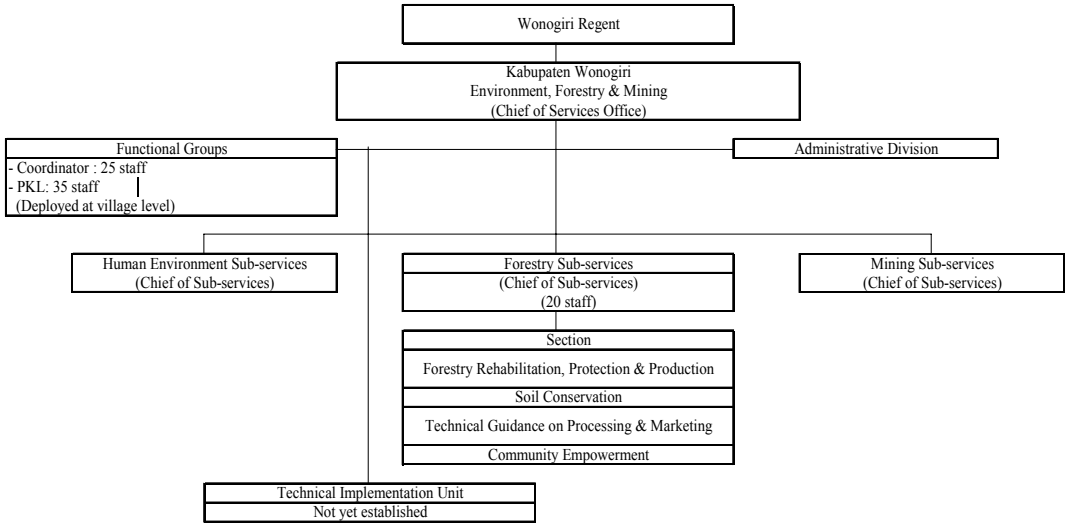


Figure 3.3.1 Organization Structure of Kabupaten Environment, Forestry & Mining Services Office, Wonogiri

3.3.2 Wonogiri Sub Dinas Kehutanan (Wonogiri Forestry Sub Service)

The Sub Dinas Forestry has 80 staff in total and comprises four sections for:

(i) Forestry Rehabilitation, Protection and Production,

(ii) Soil Conservation,

(iii) Technical Guidance on Processing and Marketing of Forest Products,

(iv) Community Empowerment.

There are 60 forestry trainers (forestry coordinators (1 per kecamatan)) and forestry extension workers (PKLs) who work with the 4 to 5 kecamatan staff undertaking extension duties in each kecamatan.

(1) Functions, Activities, Locations

The main functions of the Sub Dinas Forestry relate to "people's forest" and are as follows:

(i) Conservation: improvement of forestry practice; improvement of land use for private landowners; terracing; nurseries (this is all non-Gerhan work);

(ii) Rehabilitation: both of plantation and protected forest; includes the construction of small structures (outside the DPU area of work), for example, small check dams;

(iii) Forestry development: planting and regeneration;

(iv) Production: felling and coppicing (for only about two generations, then replant);

(v) Industry: assisting with starting up wood-based business, for example, block manufacture; arranging services for production, eg transportation;

(vi) General improvement and education of communities – community development.

Private landowners are invoiced for work done for them. Regarding work done in Perum Perhutani forests, as explained above, only expenses are paid by that company. The work for Perum Perhutani in state forests covers about 20,000 ha; work in private forest extends to about 27,000 ha. Currently about 11% of the Kabupaten is forest; for stability of the watershed, up to 30% is needed.

The previous fairly new Sub Dinas head had various ideas for improving the service (especially for private landowners) and generating more income. Collaboration with Gadja Mada University was envisaged. However, the latest Sub Dinas head has not yet firmed up these ideas into projects.

(2) Links with other Agencies

Contacts with other agencies include the following:

(i) Balai Pengelolaan Daerah Aliran Sungai[33] (BPDAS) Solo. Since *otonomi daerah*, BPDAS and Dinas LHKP work together to produce a joint watershed management plan (initiated by BPDAS), yearly or less than yearly if required to deal with some particular problem. Meetings are held in Solo or Wonogiri. A Forestry Master Plan budget for Kabupaten Wonogiri (currently about Rp.250 million) is prepared by BPDAS, Dinas LHKP and Gadjah Mada University (Yogyakarta) and agreed with House of Representatives.

(ii) Perum Perhutani, concerning assistance from the Sub Dinas Forestry with rehabilitation and conservation of protected forests.

(iii) BP2TPDAS, concerning watershed research projects and their implementation.

(iv) NGOs (mainly LPPI[34], GINATA and PERSEPSI) in villages are contacted directly for training villagers in management, conservation, production, etc.

(v) Local Security (HANSIP/LINMAS), which, with 15,800 members in 2003, helps to control watershed damage and conserve the environment.

(3) Other Facilities

Other forestry support facilities in Kabupaten Wonogiri, not directly managed by the Sub Dinas, include:

(i) 5 village nurseries (Kebun Bibit Desa – KBD),

(ii) 1 central government training facility,

(iii) Sources of tree seedlings include (a) KBDs run by farmers organized under past Sub Dinas support programs (teak and fruit trees); (b) Perum Perhutani; (c) dealers in farm inputs in and around the kab.

(4) Budgets and Sources of Funds

It is claimed there are no records of recurrent income and cost budgets for 2004. However, full annual and 5-year plans/budgets/accounts for 2006 and partial analyzed accounts for 2005 are planned. Despite this, the only information supplied to the Study team is shown in Tables 3.3.1 and 3.3.2 below:

[33] Bengawan Solo Watershed Management Office.
[34] Lembaga Pembinaan Pemuda Indonesia = Indonesian Youth Development Agency

Table 3.3.1 APBD Budget for Forestry Sub-service

Year	Rupiah
2005	374,400,000
2006	791,561,040

Source: Kabupaten Forestry Service

Table 3.3.2 APBN Income proposed by Forestry Sub-service

Year	Rupiah
2005-1st half year	7,937,874,000
2005-2nd half year	1,968,561,000

Source: Kabupaten Forestry Service

Estimates for 2004 income were:

(i) Income from APBD 2 (kabupaten funds) was about Rp1 million

(ii) Income from APBD 1 (province funds) was very small and will be discontinued

(iii) Income from APBN (Gerhan funds) was about Rp 13.5 billion but will fluctuate in future.

(5) Recommendations

This report section makes certain recommendations to help deal with issues or to otherwise improve the quality of off-farm watershed management, urgently needed in the Wonogiri catchment.

1) Law Enforcement

Determined efforts are needed to fully understand and implement the law. In the Wonogiri watershed, encroachment by farmers into forest areas and illegal logging must be controlled. Almost everyone agrees the gravity of the situation throughout Indonesia but concerted remedial action is hard to come by. This is a local problem (even if occurring nationally) and should be solved by local government, private enterprise and the community acting together.

An action program should be devised and implemented by a special task force appointed and led by the Bupati, endorsed by the Central and East Java Governors and by Ministry of Forestry. The task force should involve all the concerned Wonogiri and Pacitan kabupaten agencies including forestry, agriculture, public works, environment, police, landowners, farmer groups, and NGOs. External funding may be needed to ensure an effective and sustainable program.

2) Organization

Serious consideration should be given to upgrading Sub Dinas Forestry to a full Dinas, with the same status as Dinas LHKP enjoys at present, and more importantly, the same status as Dinas Pertanian (Agriculture). This promotion would require some rearrangement of functions within Kabupaten Wonogiri which, under OD, could be finally approved by Wonogiri Bupati. The reasons for this recommendation include the following:

(i) The crucial importance of watershed management and soil conservation would be more fully recognized thereby, both within government and externally, thus facilitating its work. Out of a total kabupaten land area of 182,236 ha, some 51,000 ha is estimated to be either moderately critical or very critical, all requiring urgent action,

(ii) Forestry is the largest sub dinas in Dinas LHKP and needs to grow considerably larger (see below) if it is to be effective and properly impact the present erosion problems,

(iii) A major increase in forest cover is needed to move from 11% towards the desired 30% of total area, a substantial program of work.

3) Staffing

(i) Discussions with the head of the Forestry Sub Dinas suggest that the number of field staff should be doubled from the present 60 to 120, to adequately undertake the necessary work in the four forestry areas of forest development, production, industrial processes, and community development. Additional staff would be concentrated in the catchments of the 4 rivers[35] receiving and delivering the most sediment. Office staff could be reduced from the present 20 to 15.

(ii) Staff capability is adequate but more training is desirable so that individuals in the field can manage their work more effectively with less supervision. Formal training courses are provided from Girabon Forestry Training Center in West Java. Some 30 courses on a range of forestry subjects are available for 2006. These are supplemented by performance feedback and on-the-job training from the sub dinas chief when convenient.

4) Equipment

More office equipment is needed especially for mapping and surveying. Both activities can be outsourced but, it is estimated, can be done more cheaply in-house while adding to staff expertise and work variety, thus improving morale.

5) Budgets and funding

The 2005 budget for capital and operating expenditure (excluding salaries) was reduced from a requested Rp.852 million to an actual Rp. 368 million, a shortfall of 484 million and a reduction of 57%. Four[36] of the 9 expenditure categories received no funds, two[37] received reduced funds, and only three (village seedling garden, erosion and sedimentation countermeasures, and improvement of primary wood industry) received the funds requested.

Forestry budgets should be fully funded, wherever possible.

3.3.3 Dinas Pertanian (Agriculture Services of Kabupaten Wonogiri)

(1) Introduction

Dinas Pertanian is the implementing agency for the management of agriculture in Kabupaten Wonogiri.

(2) Vision and Mission

The Vision[38] is: To realize a modern, strong, efficient, highly competitive, and sustainable Agriculture towards a more prosperous community in Wonogiri.

To achieve the vision, the Mission is:

(i) To support such efforts to utilize optimally agricultural resources and apply effective technologies as well as specific locations, in developing high competitiveness and sustainable agriculture.

[35] Keduang (in particular), Tirtomoyo, Temon, Upper Solo (Solo Hulu)
[36] People's forest development, castor oil development, economic and other assistance to forest community.
[37] Training for forest community, trade development assistance for forest community.
[38] Vision and mission from the Kab. Wonogiri Dinas Pertanian Renstra 2002-2005.

(ii) To empower the agricultural community towards independent, developed, and prosperous agribusiness entrepreneurs.

(iii) To develop a system of food strength based on the variety of local food material resources according to technology development, by developing competitive and comparative superiority, in accordance with the competence and production of local superiority.

The Vision should state the desired end product rather than the objective and must include a specific reference to soil conservation and sustainable land management. "Sustainable" in this context does not clearly point to watershed management and soil conservation, as it should.

The Mission, translated fairly literally, is too wordy. The message should be expressed clearly in the minimum number of words, not the maximum.

(3) Reporting Arrangements, Organization Structure and Staffing

Head of Dinas reports to Head of Kabupaten Wonogiri (the Regent) who reports to the Wonogiri House of Representatives. Reports to the Regent concern activity funded by APBD I, APBD II, and APBN, that is, all activity.

Policy (usually in the form of legislation) is decided by CG (Ministry of Agriculture) and passed to Kabupaten Wonogiri via Provincial Dinas Agriculture, together with projects and programs to be funded by APBN. Similarly, Provincial Dinas Agriculture develops projects and programs for Kab Wonogiri, together with the necessary funding. For both nationally- and provincially-funded agricultural projects and programs, Kabupaten Dinas Agriculture must report progress and the use of funds to the Ministry of Agriculture and the Provincial Dinas Agriculture, respectively.

Extension operations are undertaken by Dinas staff based in one of the 25 kecamatans. Each kecamatan is supplied with an extension coordinator and several extension staff (PPL) who all report to the Dinas Agriculture. Each PPL is expected to be competent in food crops, tree crops and even livestock. Kecamatans (districts) have no additional field personnel. Every 6 months a coordination meeting is held with all Camats[39] attending. Camats report to Bupati (the Wonogiri Regent) who assigns some authority to Camats. The arrangement is said to operate well.

One UPTD (Unit Pelaksana Tehnis Dinas) Balai Benih dan Pembibitan [Balai for Seed and Seedling Cultivation] provides seed and seedlings for farmers in a 16 ha nursery.

In the organization structure (see Figure 3.3.2 below) there are 3 Sub Dinas:

(i) Food Crops Agriculture

(ii) Estate Crops Agriculture

(iii) BIMAS Food Security.

[39] Head of District.

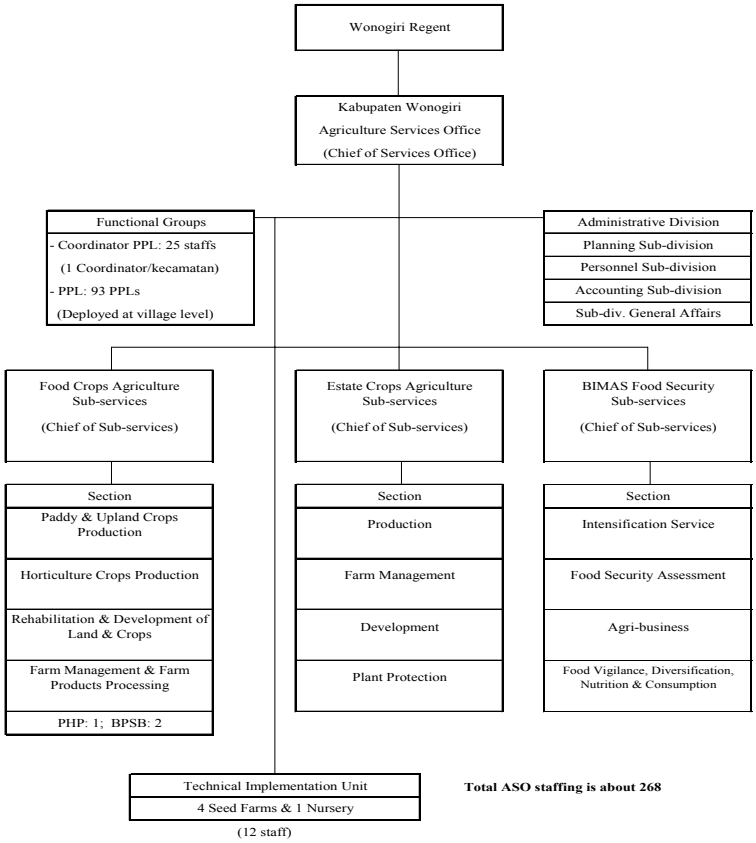


Figure 3.3.2 Organization Structure of Kabupaten Agriculture Services Office, Wonogiri

Related support is provided by Livestock Sub Dinas and Fishery Sub Dinas in the Kabupaten Dinas Livestock, Fishery and Ocean Services.

The following points should be noted:

- Only nursery staff are in the UPTD section.
- The PPL staff are here administered by the Camat although technically supervised and directed by Dinas staff.
- Functional staff are some extension specialists, advising and monitoring the work of the PPLs.

The total staffing is currently about 268, 118 of these being field extension coordinators and extension workers based in the 25 kecamatan offices, and 12 in the UPTD for seed and seedling cultivation.

(4) Functions, Activities and Locations

Main functions are stated as:

(i) Annual crop[40] planning (for private landowners/farmers; no land is owned by this Dinas except 16 ha for kabupaten nursery).

(ii) Training farmers[41] on how to improve production for all crops, and to diversify to increase income, especially on marginal soils.

(iii) Providing and charging for inputs such as organic fertilizer plus advice on how and when to use.

[40] Main perennial crops in Wonogiri are cashew nut, cacao, coconut, sugar cane, pepper and cotton.
[41] There are 147,552 agricultural farmer households in Kabupaten Wonogiri is [source: Kabupaten Dinas Pertanian]

(iv) Providing advice to farmers on how to cope with dry conditions.

There is no charge for advice.

(5) Links with Other Agencies

There should be contacts with cattle farmers, Public Works units concerning irrigation, Dinas Industry, Trade, Cooperatives and Investment concerning advice on disposal of agricultural products, Dinas Forestry regarding plantations in forest areas (permission to convert, implementation of agroforestry). PERSEPSI could be involved with the last item.

(6) Budgets and Sources of Funds (2003 to 2005)

Support programs (income) for 2003-2005 are shown in the table below:

Table 3.3.3 Agricultural Support Programs

Unit: Rupiah

	2003	2004	2005
APBD II	4,824,488,186	6,548,458,405	7,307,621,000
APBD I	173,887,500	513,260,000	371,285,000
APBN	4,570,475,000	2,396,839,000	1,239,950,000[42]
TOTAL	9,568,850,686	9,458,557,405	8,918,856,000

Source: Wonogiri Agriculture Services

Note: The APBN amount for 2003 includes a loan for nursery development to be paid back over 3 years, but the amount to pay back can be borrowed also (a rolling fund).

(7) Recommendations

This report section makes certain recommendations to help deal with issues raised in Section 3.6 or to otherwise improve the quality of on-farm watershed management, urgently needed in the Wonogiri catchment.

1) Law enforcement

A potent action program to counter (a) farmer encroachment into forest areas and (b) illegal logging must be locally devised and executed, with external assistance if necessary.

2) Cabang Dinas

The work of the Cabang Dinas, now abolished, is considered necessary. Extension coordinators are now doing 2 jobs: administration as well as supervision of field work. Each Kecamatan has only 4 or 5 staff but with necessary budget and training, could provide at least some of the support needed by coordinators.

3) Staffing

As for forestry, field staff are estimated to be fewer than needed due to budget limitations. Present field staff are 118 to service 294 villages, the total number in Kabupaten Wonogiri. Ideally, there should be one extension worker per village. Failing this, a minimum of 40 additional PPLs is considered necessary for adequate cover. Staff are thought to be sufficiently trained using facilities to be found in Semarang and Wonogiri. However, most would benefit from some form of refresher training, not normally available due to budget limitations.

[42] Until June 2005

(4) Equipment

Equipment is said to be adequate except for a shortage of functional computers (10 more are needed, some to replace old models), a rainfall gauge and ubinan equipment for agricultural production.

(5) Budgets and funding

A summary of the planned, finalized and realized 2005 budgets for about 74 line items is shown in the table below.

Table 3.3.4 Wonogiri Agriculture Service: 2005 Budgeted/Actual Income/Expenditure

(million Rp)

Budget Item	Plan	Budget	Realization
LOCAL INCOME	329	547	662
Expenditure (personnel)	13,826	7,735	7,468
Implementation & Maintenance (personnel)	97	4	4
Capital Expenditure	7	37	37
Public Services	11,741	3,262	3,133
TOTAL EXPENDITURE	25,671	11,038	10,642

Source: Wonogiri Agriculture Services

The data shows that only 41% of the planned expenditure could be funded. Public Services suffered a particularly savage reduction of 73%. Thus, to fully fund the planned expenditure in 2005, a further Rp.15,029 million would have been needed for this Dinas.

3.3.4 NGOs

In all, 117 local NGOs are registered with KESBANGLINMAS (Badan Kesatuan Bangsa dan Perlingdungan Masyarakat / National Unity and Society Protection Board) in Kabupaten Wonogiri. According to KESBANGLINMAS most of these NGOs are inactive because their finances are weak. Fewer than 10 NGOs are active and financially strong enough to undertake projects in Wonogiri.

Two of the more important NGOs dealing with watershed management are:

(i) Perhimpunan untuk Studi dan Pengembangan Ekonomi dan Sosial (PERSEPSI) – Society for Economic and Social Studies and Development,

(ii) Lembaga Pengembangan Teknologi Perdesaan (LPTP) – Institute for Rural Technology Development.

Only these two are considered by the Study team to be sufficiently qualified and experienced to operate independently in watershed management.

(1) PERSEPSI

This NGO has been in existence since 1979[43]. Its mission is to: (i) increase the community's access to, and control of, economic, political and cultural resources; (ii) increase the community's awareness and role by education; (iii) increase the community's awareness of the environment, and (re)form the social order. Its activities fall under three heads: community development (acting as counterparts), policy recommendations, and studies and training.

At present, PERSEPSI manages 9 projects in Central Java, most in the Wonogiri area, ranging from Village Soil Conservation in the Wonogiri catchment to Farmers' Income Increase in Wonogiri and Sukoharjo[44]. For 2005, 8 projects were at least partially funded

[43] Under its former name LP3ES.
[44] The increase should result from civil forest management and development of PHBML certification.

from various sources[45] up to a total of Rp.845 million. PERSEPSI has a branch office in Tulungangung in East Java. It has 35 staff including two directors. Most (70%) of the staff are honors degree holders. Its infrastructure includes three office buildings (two owned) in three kabupaten, a demonstration plot (6,000 m^2) and various cars, bicycles and computers.

(2) LPTP

Lembaga Pengembangan Teknologi Perdesaan (Institute for Rural Technology Development) was formed in 1978. Its mission is to (i) improve civil society by education oriented social movements, (ii) support public policy reform that concerns public needs, (iii) help people to satisfy their practical needs through science and appropriate technology, (iv) strengthen cooperation between organizations in economic and people development.

LPTP's activities include community empowerment, community-based housing, energy, sustainable agriculture, pest management and a farmer school. It operates in eight kabupaten in Central Java, in Sumba (energy project) and in South Sulawesi (horticulture).

It has an office in Solo from where its various activities are managed. It claims to offer a full range of consulting work from diagnostic studies to design, implementation, and M&E.

Its donors are said to include the EU, BORDA, MISERIOR, World Education, HIVOS and German Agro Action.

3.3.5 Farmer Groups and Other Organizations

(1) Farmer Groups

A number of farmer groups involved in agricultural, watershed conservation & forestry and livestock activities are formed in the project kecamatans. Those farmer groups are important institutions for the future promotion of watershed conservation activities at kecamatan and village level and will become essential stakeholders in the future promotion of watershed conservation and agricultural development in the Wonogiri catchment area.

The farmer groups (Kelompok Tani/KT) organized under the guidance and support of Agricultural Services Office are the groups being authorized (registered) by the regent, while other farmer groups are formed as groups of beneficiary farmers for government support programs and have the nature of sub-farmer groups of the authorized groups. Brief descriptions on major farmer groups are as follows;

Kelompok Tani (KT)

KTs are formed in the project kecamatans in Wonogiri and their development status is assessed by Agriculture Services Office. Within the kecamatans, 1,494 KTs are formed and they are classified into: primary level (pemula) 604 or 40% of the total, secondary level (lanjut) 555 or 37%, middle level (madya) 273 or 18% and advance level (maju) 62 or 4%. Activities of KTs are generally limited in technical issues and their economic activities such as group purchasing and marketing are seldom practiced. However, some farmer groups participate as beneficiaries in government support programs as explained in the following sections.

Beneficiary Kelompok Tani of Cashew Nut Program

These farmer groups are organized as beneficiary groups of cashew nut production increase program (Bagian Proyek Pengembangan Kawasan Industri Masyarakat

[45] Including JICA, the EU, WWF and the Ford Foundation.

Perkebunan Jambu Mete, Sub-project for Development of Community Based Cashew Nut Agro-industry Area under APBN) of Agriculture Services Office. The program aims at motivating farmer groups toward agri-business activities of cashew nut processing and marketing by group. In the project kecamatans, 26 groups in 2002 and 15 groups in 2004 received program support; direct loan to farmer groups. Total amount received by those groups are Rp. million 120 in 2003 and Rp. million 300 in 2004.

Kelompok Tani for Watershed Conservation & Forestry Programs

Formation of farmer groups for watershed conservation activities during the IBRD project were reported and continuous formation of such groups for other projects including GERHAN has been made as beneficiaries groups of various programs. Accordingly, the number of farmer groups formed for such purposes is large. The formation of 1,110 sub-farmer groups in the project kecamatans in Wonogiri up to 2002 are reported by the Forestry Sub-services Office. The commonest program activity to which farmer groups were formed is land rehabilitation followed by people's forest and terrace rehabilitation.

In GERHAN, construction works of physical structures such as gully plug, check dam and farm pond have been carried out by farmer groups formed for such construction works under the supervision of the forestry field staff. The planning and design of such works are prepared by Forestry Sub-services assisted by Kabupaten Public Works Services Office.

Kelompok Tani Livestock (Ternak)

In the project kecamatans, 139 farmer groups for livestock activities are formed. Major activities of these groups are cattle or poultry raising.

KUD is organized in every project kecamatan and there are 20 KUDs with varying degree of activities. Memberships of KUDs vary from some 1,700 to 9,200 and 4,600 on average. Main activities of KUDs are distribution of farm inputs, procurement of paddy, rice milling (RMU) and saving & credit services.

Finally, P4S is a farmer-owned and farmer-financed organization formed to train farmers.

(2) Community Organizations

Major village level communities identified in the Wonogiri catchment area include the following organizations.

Table 3.3.5 Major Community Organizations in the Wonogiri Catchment Area

Organization	Major Function
BPD/Badan Perwakilan Desa (Village Representative Board)	Role of village assembly; composed of elected people
LPM/Lembaga Pemberdayaan Masyarakat (Community Empowerment Organization)	Advice on village problem & development to a chief of village; composed of informal leaders
LPK/Lembaga Pemberdayaan Kesejahteraan Keluarga (Family Welfare and Empowerment Organization)	Implementation of family welfare activities for a village; composed of village women
Karung Taruna (Youth Group)	Implementation of activities for youth; composed of young people

Among these organizations, some LPMs recently participated in the watershed conservation activities of Kabupaten Forestry Sub-services Office as counterpart implementation organizations for programs under the KSO (Kerja Sama Operasional) arrangement. LPM could be listed as an important organization for future watershed conservation activities n the catchment area.

3.3.6 Perum Perhutani (State Forestry Corporation) KPH Surakarta (Forestry Administration Unit)

(1) Background

The forest areas in the DAS Wonogiri are classed as state forest (hutan negara) and peoples' forest (hutan rakyat). The state forest in Java Island is under the jurisdiction and management of State Forest Corporation (SFC) of the Ministry of Forestry.

The SFC's Vision[46] has the same general defect as others in this sector: it should concentrate as precisely as possible on the *outcome* required in terms of forest condition, resources and so on. *Also, neither the Vision nor the Mission mentions specifically watershed management / protection / conservation as an essential element in forest management.*

In the Wonogiri catchment, the forest area is managed by Perum Perhutani KPH Surakarta (Kesatuan Pemangkuan Hutan/Forest Administration Unit). This Unit manages 38,083 ha of State forest (although not all fully forested) in 6 kabupaten[47] located between Mount Lawu and Mount Merapi.

The kabupaten / kecamatan level operations of KPH are executed through BKPH (Bagian Kesatuan Pemangkuan Hutan/ Forest Administration Sub-unit) established at watershed levels. Field level operations are carried out by RPH (Resort Pemangkuan Hutan/Field Unit of KPH) as shown in Figure 3.3.3 below. KPH Surakarta manages 38,083 ha of State forest in 6 kabupaten and has a total staff of 338 of which 21 are graduates, only two in forestry.

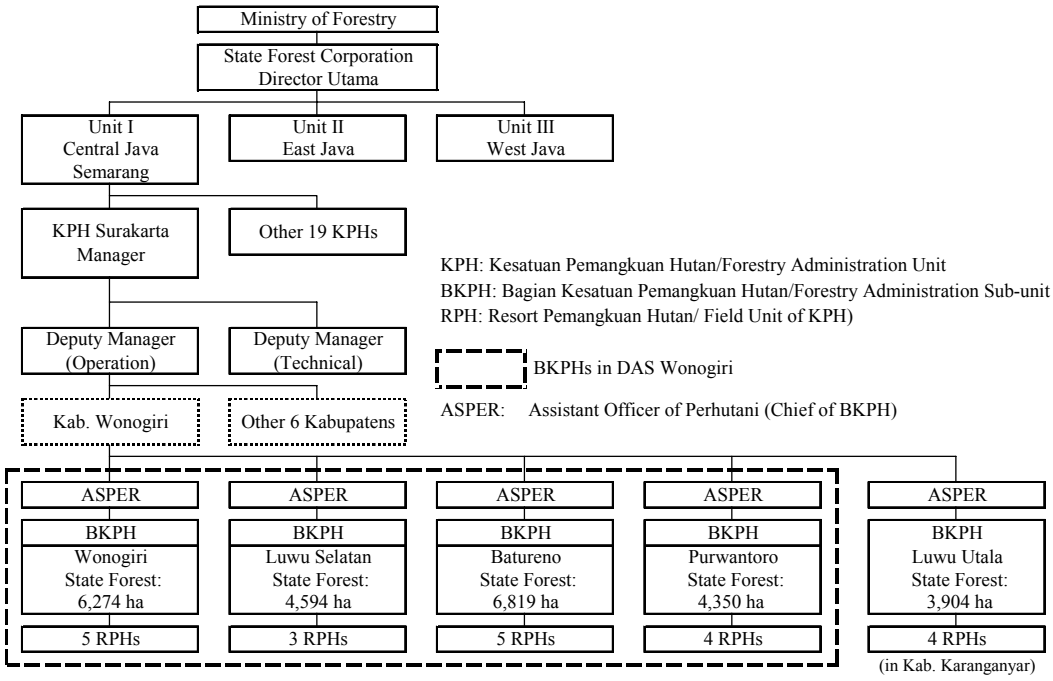


Figure 3.3.3 Organization Structure of State Forest Corporation

The state forests in the Wonogiri catchment area are mostly under the control of 4 BKPHs and 17 RPHs as follows:

[46] "Management of forest resources as an ecosystem in Java Island in a fair, democratic, efficient and professional way to sustain its function and advantage for society's welfare."
[47] The kabupaten and SFC areas are: Wonogiri (21,012 ha), Karanganyar (6,702 ha), Sragen (4,629 ha), Boyolali (3,923 ha), Klaten (1,442 ha) and Sukoharjo (375 ha).

Table 3.3.6 BKPH Covering Wonogiri Catchment Area

BKPH	State Forest (ha)	No. of RPH
Wonogiri	6,274	5
Baturetno	6,819	5
Luwu Selatan	4,594	3
Purwantoro	4,350	4

Source: Perum Perhutani KPH, Surakarta

The state forest in the Wonogiri catchment area is divided into 3 categories: i) protected forest, ii) production forest and iii) less productive forest. The area of individual categories of forests under the 4 BKPHs are as shown in the following table.

Table 3.3.7 State Forest in Wonogiri Catchment Area by Category

Category	Area (ha)	Proportion (%)
Protected Forest	3,351	15
Production Forest	17,374	79
Less Productive Forest	1,312	6
Total	22,037	100

Source: Perum Perhutani KPH, Surakarta

KPH Surakarta has links with the following agencies:

(i) NGOs and University for conducting research and other collaboration,

(ii) Ministries of Trade and Industry concerning selling, processing and distributing forest products, e.g. pine sap.

(2) Recommendation

To help to counter the present reported issues in the State Forest Company's management of its forest areas (see Section 3.6), the company should be regulated (as most public corporations are) by a suitably qualified and experienced government agency in the planning and execution of its work. It is suggested that Balai Pengelolaan Daerah Aliran Sungai Solo (BPDAS Solo) (Solo Watershed Management Office of Ministry of Forestry) should undertake this work for Perum Perhutani KPH Solo. Both agencies report to central government while operating at local level.

3.3.7 PJT I Bengawan Solo

(1) Background

In 2000, management of the Bengawan Solo River Basin was incorporated into PJT I as a Directorate reporting to the President Director by Presidential Decree No. 129/2000. The agreement to establish the Directorate was made on 21st November 2001 between Central and East Java Province. The river basin would be an additional working area for PJT I starting in 2002. The working area would be the entire Bengawan Solo River and 25 named tributaries. Operation and maintenance is carried out under the technical guidance of PJT I Brantas for rivers and related infrastructures. The PJT I Bengawan Solo (PJT I BS) does not manage the Wonogiri Hydropower Plant (PLTA) or irrigation O&M but only provides raw water.

(2) Watershed management responsibilities

In practice, the watershed management responsibilities of this body are limited to combating:

(i) In-stream erosion by natural or artificial (e.g. sand mining) means, and

(ii) Erosion of the green belt around the reservoir.

PJT I Bengawan Solo has to control the use of the river and green belt according to the relevant legislation under the supervision of the appropriate Provincial Dinas. For this

reason, PJT I Bengawan Solo should be a member of the proposed Wonogiri Watershed Conservation Coordinating Committee (WC3) recommended.

Farmers have encroached into the green belt continuously since the dam was first operated in the early 1980s, despite all (fairly feeble) attempts to prevent it. However, in the last two years a more promising approach is being attempted by a group consisting of PJT I BS, PBS, BRTP Yogyakarta, Kabupaten Wonogiri and a farmer group. It involves the planting of special crops to minimize soil loss and at the same time provide income for the farmers concerned. The participation of local people at the project stage is a key reason for the success to date of this project.

3.3.8 Coordination of Watershed Conservation

1) Background

An issue to be urgently resolved is the lack of proper coordination in watershed conservation (see Section 3.6).

At present, before national, provincial and river basin water resources councils resulting from the new water law (Law No.7 of 2004) are created, water resources management is coordinated at these levels by Water Resources Development and Management Committees (or Boards). There are three river basin Committees in the Bengawan Solo River: PPTPA[48] Upper Bengawan Solo, Madiun and Lower Bengawan Solo, all reporting to the Central Java province level PTPA[49], based in Solo. The Study team understands that the three PPTPA will eventually be reduced to one.

Other studies have pointed out the limitations of the PPTPAs (only concerned with water allocation, management measures for short term benefit, and disaster management) and PTPA (remote from field operations and populated mainly by high ranking officials). It appears that neither body is much concerned, in practice, with sustainability or other environmental aspects. Therefore management strategies for watershed conservation are missing.

To remedy this omission, three options are available:

(i) The missing watershed conservation elements (TOR and membership) could be added to each existing PPTPA and PTPA,

(ii) A separate coordination body could be established at watershed and province levels, or

(iii) The separate coordination body could be a subcommittee of the PPTPA and PTPA.

The advantage of (i) is the integration of WR management and development with the vital and related watershed conservation aspects. Also the coordination body should be quicker to set up as the PPTPA and PTPA already exist. The disadvantage is the possible sidelining of watershed conservation as less important than WR management and development. Options (ii) and (iii) would require more administrative effort and member time. In addition (iii) implies that watershed conservation is less important than WR management and development.

(2) Implementation in Wonogiri watershed

A pilot implementation of the proposed coordination body specifically for the Wonogiri catchment – which could be termed the Wonogiri Watershed Conservation Coordination Committee (WCCC or WC3) – should be a first priority for project implementation. The WC3 would be set up separately and should, in the absence of specific watershed

[48] Panitia Pelaksana Tata Pengaturan Air
[49] Panitia Tata Pengaturan Air

management legislation for this purpose[50], be established according to Law No. 7/2004 on Water Resource Management[51]. The role of Wonogiri WC3 would be to coordinate all aspects of watershed management (planning, implementation, evaluation) only in its territory, according to a plan initially prepared by BPDAS, Kabupaten Wonogiri Forestry Service and probably the Kabupaten Agriculture Service and PJT I Bengawan Solo. Initially, there would be no connection to a provincial WC3. Instead, Wonogiri WC3 would report administratively to Bupati of Kabupaten Wonogiri and technically to BPDAS Solo.

Considering the Wonogiri WC3 as a separate entity, representatives of the following Wonogiri and Pacitan local governments and other agencies should be included as members:

- BAPPEDA, BPDAS Solo, Kabupaten Forestry Service, Kabupaten Agriculture Service, Kabupaten Environment Service, Perum Perhutani (from KPH Surakarta), PJT I Bengawan Solo, Balai PSDA,

together with the following stakeholders:

- Major landowners, farmer group representatives, community representatives, PLN, a competent local NGO, a University teaching and conducting research in watershed conservation (e.g. University of Gadja Mada). There may be other stakeholders who should be included.

The following are suggested for official positions:

- Bupati of Kabupaten Wonogiri as Chairperson,
- Head of Wonogiri Bappeda as Deputy Chairperson, and
- Head of BPDAS Solo as Secretary. BPDAS should provide a secretariat.

In line with *otonomi daerah* and community empowerment, it is important that farmers and other members of the community participate fully in the work of Wonogiri WC3.

A special budget for Wonogiri WC3 should be created and funded.

The Study team has been advised that the National body presently coordinating water resources management (a predecessor to the planned National Water Resources Council) should approve (via provincial government) the Wonogiri WC3 proposal. This is due to the status of the Bengawan Solo (first, a strategic river and second, a central government responsibility because it crosses two provinces). This referral would be a necessary condition for any central government funding, in any case. An alternative view from Director Water Resources Management, MPW, says that Wonogiri WC3 could be established without national approval and that funding for it should be sourced from BPDAS. A final decision is required on this point.

(3) Implementation at river basin / watershed level (Upper Solo)

At some later stage, Wonogiri WC3 should be expanded to include the remaining kabupaten in the Upper Solo watershed which extends downstream to the Madiun confluence. At this time, two decisions could be made:

(i) To merge or not the WC3 with the Upper Solo PPTPA, and

(ii) To expand the existing PTPA to include TOR and members for watershed management, or to establish a separate Provincial Watershed Conservation Coordination Committee (PWC3).

[50] Law No. 41/99 has no separate provision for coordination of various stakeholders as a management mechanism.
[51] Water Resource Management includes conservation as a task (see Articles 85 et seq.)

3.4 Provincial and Other Regional Government Agencies

In this report section, agencies involved in watershed management (land and soil management) whose areas of jurisdiction are provincial or greater than kabupaten (large watersheds for example) are outlined.

3.4.1 Dinas Kehutanan Jawa Tengah (Forestry Services of Central Java Province)

(1) Introduction

This is essentially the Central Java Office of the Ministry of Forestry, but now with main responsibility to the Governor of Central Java.

(2) Vision and Mission

The Vision is "the management of forest resources in a preserved way for community welfare in realizing regional autonomy".

To realize the vision, the Mission is to:

(i) To keep the availability of state forest resources and increase areas for forest function.

(ii) To develop state and people forest as well as increase forest product processing.

(iii) To realize rehabilitation of critical land, reforestation, and greening.

(iv) To carry out management, protection, and security of forest resources.

(v) To enhance professionalism of human resources for forestry.

(vi) To develop institution of organization of the Agency of Forestry and community in the field of forestry.

(vii) To increase community welfare.

3) Reporting Arrangements, Organization Structure and Staffing

As for all provincial dinas, this one reports to the provincial Governor, who reports in turn to Central Java DPRD (House of Representatives), concerning activities, costs and budgets. Dinas Kehutanan also reports to the Ministry of Forestry (via the "deconcentration principle") for technical standards and policy, and the use of APBN funding.

The dinas is structured as follows (see Figure 3.4.1 below for outline organization chart). Four main sub dinas responsible for (i) planning and programming, (ii) the arrangement and protection of forest, (iii) rehabilitation of forest to increase the productivity of land and forest, and (iv) the execution of forest production. It is understood that sub dinas (iii) and (iv) undertake "hands-on" work in trans-kabupaten forests and also assist Kabupaten dinas as required within kabupaten boundaries.

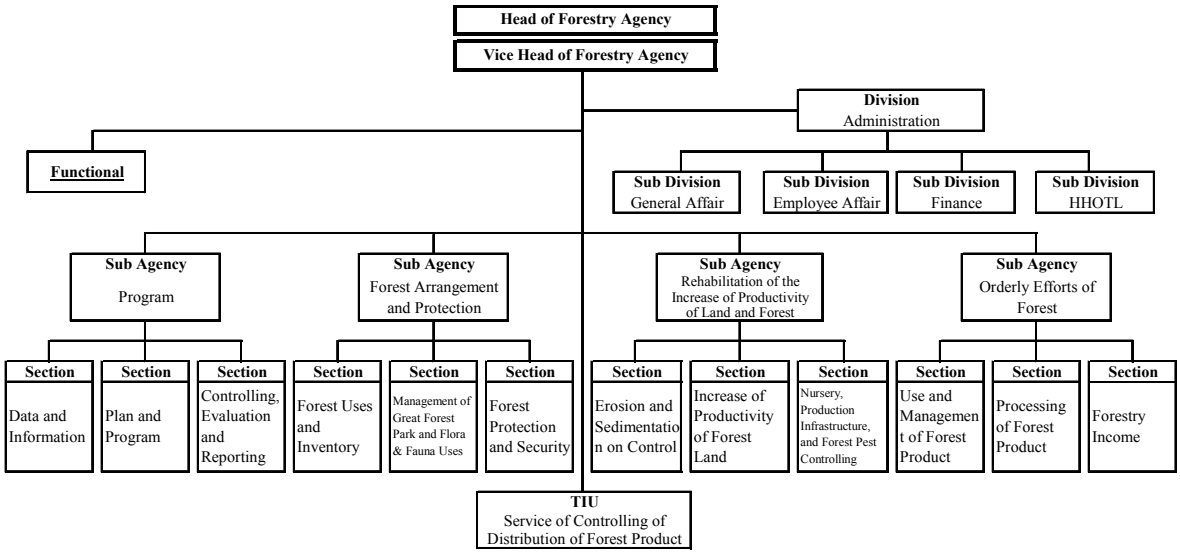


Figure 3.4.1 Organization Structure of the Forestry Agency in Central Java Province

In addition to a functional group of 7 staff, and an administrative unit of 44 staff (about 24% of the total dinas staff), there are four recently created UPTDs, Balai Pengendali Peredaran Hasif Hutan (BPPHH) or Office for Forest Product Distribution and Control based in Semarang, Tegal, Pati and Kendal. The main job of these four units is to inspect all certification for cut timber and take action against those without the correct documents. The principle is excellent. However, until there is a major and long overdue change in the enforcement climate in Indonesia[52], it is likely that the cost of such a force outweighs the benefits.

The total number of staff in the dinas is about 148 compared with an establishment of 180. This represents a major shortage of staff.

(4) Functions, Activities, Locations

In Central Java's regulations, 19 activities are listed for this Dinas. Management listed the following as most important:

(i) Overall, the aim is to increase average forest cover from 27% to 30% in Central Java. [Management claims that 27% is the latest correct figure]

(ii) Undertaking overall coordination of conservation, rehabilitation and development of protected forest (with Perum Perhutani; no cutting) and tourism forest (with Perum Perhutani; cutting allowed). Production forest (selected cutting) is the sole responsibility of Perum Perhutani.

(iii) Rehabilitation for private owners only. This can involve construction of small check dams.

(iv) Tree nursery planning, and advice on and supervision of execution and maintenance. Some provision of fertilizer. There is no charge to private landowners. A contribution to the cost is made from APBN, province (APBD1) and kabupaten (APBD2) budgets. Management is undertaken by this Dinas.

(v) Supervision and protection of logging operations in the province, by recently created UPTDs (see 3) above). In addition to checking certification for all logs (cut timber), they also liaise formally with kabupaten Dinas Forestry.

[52] Such a major change is advocated in Section 3.3.2(5)

(5) Links with Other Agencies

Dinas Forestry is said to "coordinate" with BPDAS over annual planning and implementation of forestry work plans in common territory. Three meetings a year are held: the first for planning, the second for implementation, and the third for evaluation of work done. Other agencies related to forestry within the territory also participate.

(6) Budgets and Sources of Funds

Two recurrent cost budgets for 2005, are funded as follows:

APBD1 = Rp. 6 billion

APBN = Rp. 4.6 billion

On the capital account, a project started in 2005 to rehabilitate the Merapi / Merbabu Forest. Cost is estimated at Rp. 950 million and will be funded jointly via MOU from provincial and national budgets.

(7) Major Weaknesses, Problems and Issues

(i) According to the present establishment there is a shortfall of 32 staff, mainly in the skilled jobs. Reasons include small salaries and (relatively) hard work. Higher salaries are needed for technical staff.

(ii) Concerning the operating budget, only about 50% of the initial budget proposals can be funded.

(iii) The community in general is said to have a "poor attitude" towards watershed management. For example, farmers are encroaching, *apparently without hindrance*, into state forests. A major improvement is urgently needed but the problem in (i) is limiting what can be done[53].

(8) Other Information

The Dinas staff interviewed claim that relations with kabupaten staff are good and that the present organization of watershed management is satisfactory (e.g the linkage between forestry and agriculture is adequate. On the other hand, the Ministry of Forestry is accused of "old style" management (top down with little consultation). It is also suggested that the Ministry has not slimmed its organization (like many other CG agencies) in line with *otonomi daerah*) despite the transfer of work and decisions to local government.

3.4.2 Dinas Pertanian Jawa Tengah (Agriculture Services of Central Java Province)

(1) Introduction

Dinas Agriculture for Central Java is responsible to the Governor for provision of agricultural services within the province according to policies and standards established by Ministry of Agriculture. As for Dinas Forestry, its role is primarily to assist kabupaten level dinas to implement policies and plans.

(2) Vision and Mission

The Vision is: "Realization of an independent, competitive, fair, and sustainable system of food crop agribusiness and horticulture based on a preserved resources management".

The Mission is:

(i) To enhance income and welfare through empowerment of agricultural community to independent efforts at villages.

[53] See proposal for Kabupaten Wonogiri in Sub-section 3.3.2(5)1).

(ii) To develop such efforts in food crop agribusiness and horticulture to fulfill the need of sufficient, safe, and attainable food material, industrial raw material, and exported raw material.

(iii) To develop effective, locally specific, and environmentally friendly agricultural technologies.

(iv) To improve the quality of human resources and agribusiness institutions.

(v) To support the increase of quality and competitiveness food crops and horticulture.

(vi) To support the integration of agricultural centers, agro-industry and the market.

As mentioned elsewhere in this report, a serious and extraordinary flaw is the absence of any reference to soil conservation, especially in the more detailed mission statement.

(3) Reporting Arrangements, Organization Structure and Staffing

As usual, the head of this Dinas reports to the Governor concerning its activities and costs versus budget. It also reports to Ministry of Agriculture (via "deconcentration") for implementation of policy and standards, and monthly on work activity (to DG Food Crops) and on Financial matters to the Bureau of Planning and Finance.

The fairly standard organization structure comprises four main sub dinas for (i) planning and programming, (ii) production (rice crops, horticultural and seed production), (iii) agricultural infrastructure (agricultural machinery, irrigation and land rehabilitation, agricultural production infrastructure) and (iv) human resource development and agricultural business**.** In addition, there are the functional group and administrative unit, and seven UPTD groups.

The UPTDs[54] are as follows: (i) Balai Food Crops Seed and Horticulture for Semarang Sub Region[55], (ii) Balai Food Crops Seed and Horticulture for Solo Sub Region, (iii) Balai Food Crops Seed and Horticulture for Banyumas Sub Region, (iv) Balai Agricultural Resources Empowerment, (v) Balai Food Crops and Horticultural Protection (vi) Balai Seed Control and Certification, and (vii) The H. Moenadi High School.

The total staffing for the Dinas is about 1,070, of which about 450 work with kabupaten staff in the province through the first six UPTDs.

(4) Functions and Activities

From interview with the Head of Dinas:

(i) Advice, supervision on or direct planting of tree crops, both private and state. Kabupaten staff decide on the program of work which is followed by the province, budget permitting. Kabupaten agricultural staff will request assistance (usually financial) from Province and Ministry as necessary and will report to Province on the use of such funds.

(ii) No other work areas can be tackled due to shortage of funds. Budgets are too small.

(iii) Training of trainers from Kabupaten. in various skills and disciplines.

There are no plans to expand activity due to shortage of funds. On the contrary, the Dinas expects to reduce activity because of decreasing budgets. For example, APBN program support in 2005 was Rp.40 billion. This will reduce in 2006 to Rp.15 billion, a reduction of more than 60%. It is believed that the Ministry of Agriculture is not reducing; in this case the transfer of funds to kabupaten is being funded from the province.

[54] Unit Pelaksana Teknis (Dinas) = Technical Implementation Unit (Service)

[55] Wilayah = Sub Region. There are three in Central Java.

(5) Contacts with other Agencies

From interview with the Head of Dinas, the main contacts are (i) Balai PSDA[56], (ii) Dinas Forestry for Central Java, (iii) Balai PDAS[57] (watershed planning, monitoring), and Dinas Meteorology for Central Java.

Collaboration between Forestry and Agriculture at kabupaten level is said to depend on the kabupaten head concerned, but is almost certainly inadequate.

(6) Major Weaknesses, Problems and Issues

A major problem is the present and, far more damaging, future shortage of funds (see paragraph (4) above). A further serious weakness is the apparent lack of emphasis on soil conservation (see paragraph (2) above).

3.4.3 Balai Pengelolaan Daerah Aliran Sungai Solo (BPDAS Solo) (Solo Watershed Management Office of Ministry of Forestry)

(1) Introduction

BPDAS Solo is responsible for planning and supervising watershed management in the DAS Solo watershed of total area 1,930,058 ha. Its responsibilities are limited, at present, to non-State forest only. This watershed has the following components:

- Bengawan Solo watershed : 1,623,911 ha
- Grindulu watershed : 114,142 ha
- Lorog watershed : 65,259 ha
- Lamong watershed : 27,100 ha
- Prumpung Klero : 99,646 ha

Of the total area, forest (State and non-State) amounts to 424,245 ha, paddy 670,254 ha and villages 353,138 ha.

(2) Vision and Mission

The Vision is stated as "achieving planned and controlled watershed management within a fixed institution and information system". (See Sub-sections 3.3.1 (2) and 3.3.3 (2) for earlier comment on Visions and Missions, relevant here.)

The Mission is stated as:

- To establish/strengthen: (i) the watershed management plan, (ii) the system of watershed monitoring and evaluation, (iii) the system of watershed management institution, and
- To develop the system of watershed information and management.

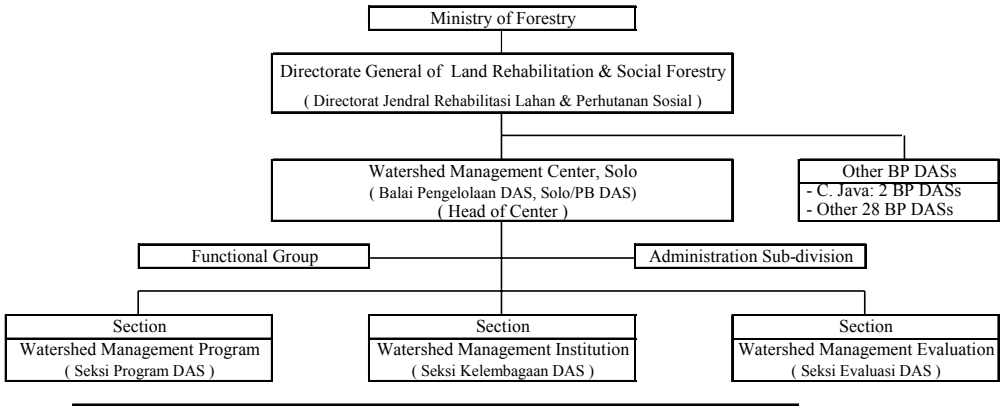
(3) Reporting Arrangements, Organization Structure and Staffing

BPDAS Solo reports to DG Land Rehabilitation and Social Forestry, Ministry of Forestry. It acts as a TIU for the Ministry (one of 31 nationally) implementing watershed management policy, standards and technical guidance (by consensus) within its area of jurisdiction.

As can seen in Figure 3.4.2 below, the BPDAS Solo organization consists of three main sections responsible for: planning and programming; watershed institutions (concerned with, but not dealing directly with, stakeholders in the watershed, especially farmers)[58]; and watershed evaluation (of plan implementation). In addition, there is a "functional

[56] PSDA = Pekerjaan Umum Sumber Daya Air = Water Resources Management
[57] PDAS = Pengelolaan Daerah Aliran Sungai = Watershed Management
[58] Direct contact with stakeholders is now delegated to kabupaten agencies.

group" of 6 persons who are supposed to provide functional skills to several units, and a too large administration sub-unit of 45 persons (nearly half the present total staffing of 100 persons).



Staffing:

Watershed Management Program Section	19	Administration Sub-di	45
Watershed Management Institution Section	14	Functional Group	6
Watershed Management Evaluation Section	15	Total	100

Gol IV: 2, Gol III 58, Gol II 31, honorarium staff 9

Figure 3.4.2 Organization Structure of BP DAS Solo

(4) Functions and Activities

BPDAS' main external functions were stated to be, for non-State forest:

(a) Compilation of watershed management plans for soil conservation and land rehabilitation: long term, 5-year and annual;

(b) Compilation and presentation of watershed information. Base data includes information on land use, demography, ownership, transport infrastructure, etc. and is updated every five years. Data should be updated more frequently;

(c) Development of micro watershed management models of about 1,000 ha. To date three have been produced: the future target is a new one annually;

(d) Development of watershed management institutions and partnerships,

(e) Monitoring and evaluation of watershed management.

All the above activities require significant input from and collaboration with kabupaten and province forestry services.

(5) Links with Other Wonogiri Agencies

Main contacts are said to be with Kabupaten Dinas: LHKP (Sub Dinas Forestry); Agriculture; Regional Planning (BAPPEDA); Demography and Civil Records (for statistical information; primarily for planning and monitoring purposes. Also provincial forestry and environment services (BAPEDALDA). Three meetings a year are held with the above and other stakeholders for planning, implementation, and M&E respectively. However, BPDAS has no line authority over these other agencies; it has to rely on persuasion. In the event of major disagreements, the President would, presumably, have to intervene, as the Ministry of Forestry has no direct authority over local government. BPDAS Solo has no working contact with KPH [59] Solo, the local State forest administration unit, or with the Wonogiri watershed level BKPH[60] forest administration sub-unit.

[59] Kesatuan Pemangkuan Hutan Solo
[60] Bagian Kesatuan Pemangkuan Hutan Solo

(6) Budgets and Sources of Funds

The recurrent cost budget for 2005 is about Rp.4 billion (Rp.2.5 billion for salaries) and this has not changed much over the past few years. All costs are funded by APBN (Gerhan funds pass directly to each kabupaten). There are no significant capital projects in progress.

(7) Recommendations

(i) In view of the erosion occurring in parts of State forests, and bearing in mind that Perum Perhutani (an independent profit-oriented entity) is unregulated, BPDAS's planning, monitoring and evaluation remit should be extended to include State forest. All forested areas would then be monitored by the same central government body, Directorate General of Land Rehabilitation and Social Forestry.

(ii) Training should be provided for certain staff in the development of watershed management technology (e.g. GIS, hydrology etc).

(iii) GPS equipment and a hydrology laboratory for sediment testing are needed.

(8) Staff Training

BPDAS technical staff are trained at (or from) the Center of Forest Training at Pogor near Jakarta. BPDAS staff then train kabupaten staff in watershed management techniques.

3.4.4 Balai Penelitian dan Pengelahan Daerah Aliran Sungai Wilayah Indonesia Bagian Barat (BP2TPDAS IBB) Surakarta (Watershed Management Technology Center of Indonesia Western Region, Surakarta, Ministry of Forestry)

(1) Introduction

Watershed Management Technology Center for Western Region, Surakarta (BP2TPDAS IBB) is a watershed management research & technology development institute covering the Western Region of Indonesia. It is one of two research centers established under the Forestry Research & Development Agency (FORDA) of the Ministry of Forestry.

(2) Vision and Mission

The Vision is: "The availability of the watershed management technology for utilizing nature sustainably, productively and fairly for the benefit of the people".

The Mission is to:

(i) Formulate R&D action plans to satisfy user needs and anticipate problems,

(ii) To undertake high quality R&D,

(iii) To disseminate the results of R&D to the user,

(iv) To establish BP2TPDAS as the center for watershed management information and services.

(3) Functions, Organization and Staffing, Funding

The primary mandate of FORDA and, therefore, of the Center is to find and to provide science and technology to support sustainable, diversified uses of forest for the benefit of people. Under the said mandate, the Center has the main tasks of carrying out research and trials to formulate watershed management technology packages.

To implement this task, the Center has three main functions:

(i) To conduct research & trials and assemble technology on watershed management techniques and

(ii) To disseminate research outputs

(iii) To monitor and evaluate the field implementation of the outputs.

The organization of the Center consists of: i) three researcher groups of soil & water conservation, hydrology and forestry socio-economics, ii) a planning & evaluation section, and iii) a publication & dissemination section. The total number of staff in the Center is 121 (94 government and 27 non-government) of which 53 are either researchers or technicians.

The major activities of the three researcher groups are:

Soil & Water Conservation (11 research staff)

- Research & technology development on proper land management, land rehabilitation and soil conservation measures

Hydrology (7 research staff)

- Research & technology development on sedimentation, drainage system, flood protection and monitoring & evaluation of water resources

Forestry Socio-economics (10 research staff)

- Research on socio-economic aspects of watershed and watershed management activities

Research in BP2TPDAS IBB is funded by APBN and from Other Government Fund (DPL). In addition, some other work is funded by other institutions such as Perum Perhutani through research links.

(4) Outputs and Other Information

Significant research results from the Center include:

(i) Manual of Watershed Monitoring and Evaluation (revised 2004)

(ii) Flooding: Causes and Solutions (2002)

(iii) Manual of Soil Conservation Practices (2002)

(iv) Manual of Watershed Management Planning (2002).

(5) Issues and recommendations

There are no reported issues and no recommendations for this agency.

3.5 Central Government Agencies

Three central government agencies are responsible for various aspects of watershed management: Ministry of Forestry and the State Forestry Company, and the Ministry of Agriculture. The local unit of the State Forestry Company is briefly reviewed in Sub-section 3.3.6 above.

3.5.1 Departemen Kehutanan (Ministry of Forestry)

The Ministry of Forestry is mandated through legislation to regulate the sustainable use of forested watersheds nation-wide. It does this with highly variable results mainly through 31 UPTs responsible for major watersheds.

The main functions of the Ministry as set out in the relevant regulation, are:

(i) Formulation of national policy, implementation policy, and technical policy in forestry,

(ii) Implementation of governance concerning to its job area,

(iii) Management of state property in the Ministry's charge,

(iv) Supervision of the implementation of its functions

(v) Submission of reports to the President on evaluation results, proposals and other considerations concerning the Ministry's functions.

The overall organization structure of the Ministry is shown in Figure 3.5.1 below. In addition to the standard ministerial administrative offices and advisers, there are three Directorates General responsible for (i) land rehabilitation and social forestry, (ii) forest protection and natural conservation, and (iii) forestry production management. There are also two agencies (or Boards) responsible for forestry planology (planning forest use), and forestry research and development. There are about 4,000 staff in the Ministry, a number, it is understood, which has not altered much in the past several years, despite the implementation of *otonomi daerah.*

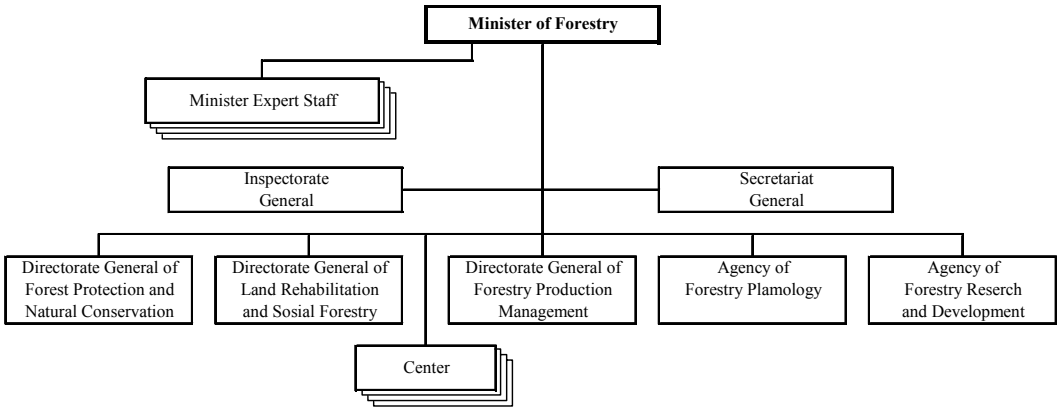


Figure 3.5.1 Organization Structure of the Ministry of Forestry

The DG Land Rehabilitation and Social Forestry (see Figure 3.5.2 below for the organization structure) has specific responsibilities for the theory and practice of watershed management in forested areas nationally. The 31 UPTs (known as Balai Pengelolaan Daerah Aliran Sungai or BPDAS) which report to the DG undertake the planning and supervision of watershed management. BPDAS for the Solo group of watersheds is discussed in Sub-section 3.4.3 above.

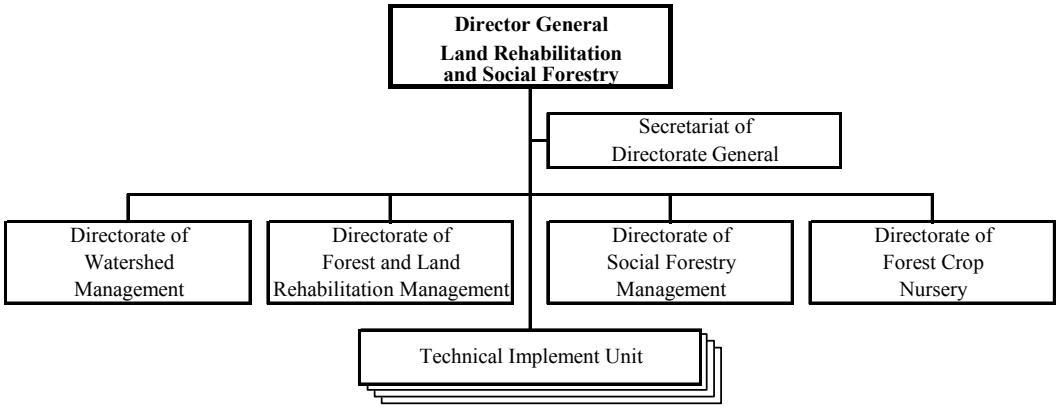


Figure 3.5.2 Organization Structure of the Directorate General of Land Rehabilitation and Social Forestry

Apart from the BPDAS, there are no subordinate agencies managing watersheds. Instead, under *otonomi daerah (OD)*, the following relationships apply.

(i) National policy, i.e. laws and regulations regarding watershed management, must be obeyed at kabupaten and province level. BPDAS and provincial forestry services are supposed to monitor this.

(ii) Under OD, most authority is assigned to kabupaten and kota, while in principle, only authority dealing with trans-kabupaten/kota activities is retained by the province. Authority dealing with trans-province activity is retained by the Ministry but usually assigned to the province as this is where the implementation capacity should reside.

This means that BPDAS has no direct authority over any agency at any level in the management of watersheds.

(iii) In budget terms, kabupaten and kota and provincial units all have to report to the Ministry on the use of APBN funds. On the use of APBD 2 funds, the Ministry is said to "coordinate" through the province, the use of such funds. Under OD, this cannot be done without the agreement of the kabupaten or kota concerned.

Summarizing, the Ministry says that the power of BPDAS extends to "coordination" only at the planning stage and later. It has to persuade for all areas and activities outside policy. For any serious disagreement, the Ministry would have to involve both the provincial governor and the President.

3.5.2 Departemen Pertanian (Ministry of Agriculture); DG Land and Water Management

During the visit to this ministry, the Study team was informed by a senior legal officer that the Directorate General for Land and Water Management (DGLWM) has the most responsibility for land and soil management in the Ministry. DGLWM is therefore the subject of this section.

DGLWM's Vision is: "the sustainable availability of land and water for confirming food security, improving added value and the competitiveness of agricultural products, and improving the farmer's welfare".

DGLWM's Mission is:

(i) To motivate the community to extend the agricultural area,

(ii) To utilize land for sustainable agricultural activities,

(iii) To motivate the community to participate in effective and efficient water management for sustainable agricultural activities,

(iv) To undertake the development of management and administration based on transparency and accountability.

Again, there is no specific reference to the need for soil conservation, only indirectly through the word "sustainable".

The organization of this Directorate General is summarized in Figure 3.5.3 below. Three directorates for Area Extension, Land Management and Water Management report, with the DG's Secretariat, to the DG. This Directorate General considers that provincial dinas for food crops agriculture, plantations and animal husbandry are also under its technical (at least) authority. But it appears that because all provincial dinas report in the first instance to the provincial governor, they are under the jurisdiction of Ministry of Home Affairs. If so, this is clearly wrong. All sectoral dinas whether at province or kabupaten level should be under the overall jurisdiction of the sectoral ministry, in this case the Ministry of Agriculture.

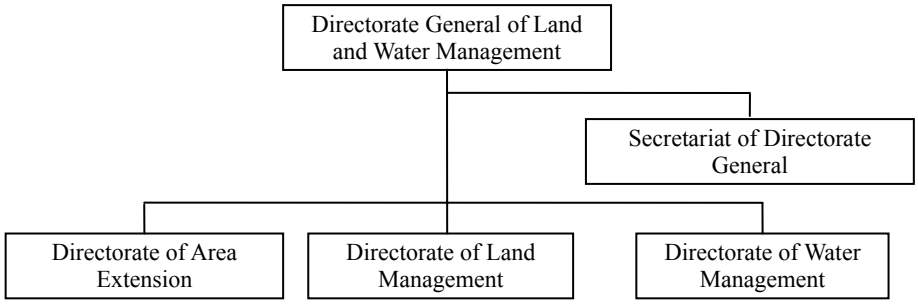


Figure 3.5.3 Organization Structure of the Directorate General of Land and Water Management

There are 324 staff in DGLWM.

The main functions of DGLWM are, nationally:

(i) Formulation of policy in agriculture area extension, land management and water management for irrigation.

(ii) Implementation of policy in agriculture area extension, land management and water management for irrigation.

(iii) Arrangement of standards, norms, manuals, criteria and procedures in agriculture area extension, land management and water management for irrigation.

(iv) Delivery of technical guidance and evaluation in agriculture area extension, land management and water management for irrigation.

DGLWM coordinates in land management matters with the Ministry of Forestry.

3.6 Current Institutional Issues for Wonogiri Watershed Management

A number of issues and constraints – some appearing in earlier report sections - are preventing the satisfactory management of Wonogiri watershed. The more important of these are summarized in the table below. Explanatory comments follow the table.

Table 3.6.1 Main Institutional Issues and Recommendations

No.	Main Issues	Recommendations
1	• Lack of law enforcement. Shown by: - Farmer encroachment in forest areas - Illegal logging - Illegal forest burning - Etc • Little concerted action (that is, addressing all relevant factors systematically) to combat the problem	• Bupati should establish a task force composed of all concerned government and private groups in the kabupaten (e.g. forestry (including KPH Surakarta for State forests), agriculture, public works, police, farmer groups, NGOs). With the approval of Central Java Governor. • The task force should develop a plan taking into account all necessary aspects and then ensure its execution. External funding to be arranged as required.
2	• Lack of emphasis on watershed management (soil management) especially in agricultural agencies. Admitted by some provincial officials.	• All visions and mission statements should state clearly the responsibility for watershed management at kabupaten, province and national levels. • Managers and staff need to think more of longer term watershed conservation
3	• Lack of funds and other resources at kabupaten and , increasingly, province levels of government to fulfil their TOR and strategic plans. • Sufficient funds have not been transferred from CG to province and to kabupaten level > *otonomi daerah.* This has caused overlapping roles and lack of accountability at lower levels.	• Sufficient funds should be transferred from CG to allow adequate capacity building in the s/dinas forestry and dinas agriculture. • In addition, kabupaten and province to raise money from cost reduction (e.g. labor costs too high) and business development. Serious effort needed here.
4	• Management of watershed conservation / management has been neglected due to 3 above, but also from lack of attention to coordination of this essential task. • No one agency has overall responsibility for watershed management.	• Top down management of this area by CG bodies such as BPDAS, is no longer possible after *otonomi daerah*. • Effective coordination via committee at watershed and province levels seems the best compromise. Several options exist for organization of these committees: 1) Add watershed conservation TOR and members to the existing PPTPA and PTPA committees (soon to become WR councils) 2) Set up separate watershed management committees like PPTPA 3) Set up separate watershed management committees

No.	Main Issues	Recommendations
		as sub committees of PPTPA and PTPA. Advantages of 1) • Integration of WRM and watershed management • Quicker to establish as WRM committees already exist Disadvantage of 1) • Watershed management could be sidelined as most attention on WRM • Note that options 2) and 3) need more administrative effort and member time. Pilot Implementation in Wonogiri Watershed • A pilot watershed conservation coordination committee (WCCC or WC3) should be set up immediately for the Wonogiri watershed, in order to: - Coordinate all aspects of watershed management (planning, implementation, evaluation; on-farm & off-farm) • WC3 members would include representatives from Wonogiri and Pacitan governments and other agencies, e.g.: - BAPPEDA; BPDAS Solo; Kabupaten Forestry, Agriculture and Environment Services; Perum Perhutani (KPH Surakarta); PJT I Bengawan Solo; Balai PSDA; and stakeholders: - Major landowners; farmer group representatives; community representatives; PLN; local NGO; a University (Gadja Mada); • Wonogiri WC3 could later expand to cover all the Upper Solo watershed like PPTPA Solo, as follows: - by adding WM functions and members to PPTPA; - by forming a separate WM committee (an expansion of Wonogiri WC3; - by forming a separate WM subcommittee attached to PPTPA.
5	Concerning the management of State forests by Perum Perhutani: • Current poor condition of some areas of KPH Surakarta reported by various sources (e.g. less than 11% currently forested says S/dinas Forest Wonogiri. Should be up to 30%) • Vision and mission statements of Perum Perhutani do not mention watershed conservation and protection • Highly probable that too little attention given to this aspect of forest management	• Perum Perhutani (i.e. KPH Surakarta) should be regulated on Central Government's behalf by a suitably qualified and experienced agency. BPDAS is suggested because: - It is a already assisting the planning and monitoring of non-State forests - Watershed management is its main and specific remit - It reports to Ministry of Forestry (DG Land Rehabilitation and Social Forestry) - It was set up as a planning, monitoring and evaluation agency. • It would be beneficial to bring all forested areas under the supervision of one agency.
6	• There have been many complaints by managers at kabupaten and province levels of staff lacking adequate training	• All managers – especially in Kabupaten Forestry and Agriculture – should formally review the competence and level of training of each member of their staff against what is needed (this is Training Needs Analysis). • Determine training needed and ensure it is provided soonest. Prioritize according to greatest benefit.
7	• Sub Dinas Forestry is the most important unit in Dinas LHKP (environment and mining services are the other two)	• Sub Dinas Forestry should be upgraded to a full Dinas soonest because: - This would give proper emphasis to forestry and watershed management compared to agriculture (out of

No.	Main Issues	Recommendations
	• Past lack of emphasis on watershed management must be corrected	total area of 182,000 ha, some 51,000 ha is estimated to be either critical or moderately critical) - This unit will need to grow significantly to undertake the workload needed (eg to increase the forested areas from 11% towards 30% in the kabupaten)
8	• Sub Dinas Forestry is under staffed, under equipped and under funded to handle its workload	• Head of Sub Dinas estimates that field staff should be doubled to 120 to cover the work needed in its areas of forest development, production, industrial processes and community development. Additional staff would be concentrated in the following river catchments: - Keduang, Tirtomoyo, Temon, Upper Solo. • Also field staff in particular require more training so that they need less supervision. • More office equipment is needed especially for mapping and surveying • Budgets under funded by up to 60% (Rp.484 million in 2005) should be topped up.
9	• Dinas Agriculture is under staffed, under equipped and under funded to handle its workload. Some of this shortfall will adversely affect the improvement of watershed management. • Absence of Cabang Dinas giving Extension Coordinators too much to do (administrative + field supervision).	• A minimum of 40 extra field staff (PPLs) is needed to service 294 villages giving a total of 118+40=158 persons. (Ideally, the ratio should be one PPL per village) • Refresher training is needed for all field staff. • 10 computers (to replace old ones), a rainfall gauge and ubinan equipment are also needed. • Only 41% of the 2005 planned expenditure could be funded, with especially large shortfalls in Public Services (more than 70%). To fully fund the planned Wonogiri budget for this dinas would require an additional Rp.15 billion. • Re absence of Cabang Dinas: one or more kecamatan staff should be educated / trained to handle at least some of the administrative workload under supervision of Extension Coordinator and Camat.

Comments on Issues

(i) Lack of law enforcement is easily the biggest issue concerning watershed management (and many other sectors as well). This is a problem partly of political will at every level, partly of definition of authorities which remain poorly defined. As has been noted in other reports, if laws are not properly enforced, the whole legal system is brought into disrepute. Now, under a new administration the various laws and regulations governing watershed management should be progressively and continuously applied, with severe penalties for senior officials who do not comply. A great deal of socialization will be needed if this initiative is to succeed.

Principal and ongoing manifestations of this lack of enforcement include: illegal logging[61], illegal forest clearing mainly by fire, and illegal encroachment by farmers into forest areas, all on a huge scale. Remedial action is recommended in Sub-section 3.3.2 (5).

(ii) Technical Dinas at province level (at least in agriculture) are apparently reporting (i) to the Governor and (ii) to MHA rather than to the technical Ministry responsible. This makes no sense. The complaint was made by the Ministry of Agriculture (Directorate General of Land and Water Management).

(iii) Lack of emphasis on watershed (or soil) management (WM) per se (that is as an

[61] This includes logging by certain kabupaten of trans-kabupaten forest (i.e. forest in a trans-kabupaten watershed or river basin), which should be under the jurisdiction and control of the province.

important subject legally, organizationally, training and development-wise) everywhere but particularly in the agricultural sector. It is sometimes hidden in a phrase or word such as "sustainable" (agriculture) without being clearly specified.

(iv) There are many organizations in the WM field, some with apparently overlapping mandates. There is a lack of clarity in defining the exact boundaries of each organization's remit *in practice*. Part of the problem here is the lack of resources apparently available at kabupaten and, increasingly, province levels. In other words, capacity of each forest or agricultural unit is often not sufficient for it to properly carry out its remit. So it obtains insufficiently specified assistance from the next higher level. In general, insufficient resources have been transferred from central and provincial governments to local government post *otonomi daerah (OD)* to cope with the significant workload increase arising from this decentralization program. In some cases, funding is even being cut back, as in the case of Dinas Kehutanan (Forestry Service) and, in particular, Dinas Pertanian (Agriculture Service), both of Central Java. The Study team has learned that there is little intention to transfer substantially more funds to kabupaten. This may be because of central government's fear of a too powerful local government and because of the usual reluctance for central bureaucracies to reduce costs when there is less work to do. In any event, this is not the way to implement OD.

(v) No single organization has overall responsibility for WM *and* is able to override all others in pursuit of "perfect" WM. However, this is not achievable or even desirable, given the implementation of OD. A reasonable compromise would be to use an *effectively managed* coordination committee (probably at two levels) with membership from the various stakeholders. This is further discussed in Sub-section 3.3.8 above.

(vi) The Kabupaten Wonogiri Dinas Agriculture has complained about the disappearance of the Cabang Dinas attached to Kecamatan for administering kabupaten staff based there. The head of this dinas estimates that the supervisory extension coordinators (one for each kecamatan) are overloaded with two jobs: administration as well as managing field work. This problem should be addressed, but not necessarily by reinstating the Cabang Dinas (see Sub-section 3.3.3 (7) above).

(vii) In view of the size and value of Perum Perhutani's forests, production and non-production, and the fact that some production and protection forests are severely eroded[62] and without forest cover, there is a case for independent regulation of this commercially oriented corporation. The regulator should be the same body that is already helping to plan and manage the non-state watersheds to ensure consistency in WM (see Sub-section 3.3.6). Furthermore, Perum Perhutani should be a member of any body that coordinates watershed management.

(viii) It should be said that, under OD, the removal of any effective control link between provincial level agencies and kabupaten / kota has made the current management of local government (a fairly standard bureaucracy after all) more problematic and unpredictable, in structure, efficiency and output quality. It remains to be seen whether this experiment in governance eventually yields the results desired by its designers. However, legally, central government remains in control of conservation, and of National Parks in particular. These are administered by provincial forestry services on behalf of the Forestry Ministry.

[62] Stakeholders at a recent consultation meeting (Wonogiri, 26 January 2006) confirmed that Perum Perhutani practices have created large quantities of sediment in Kecamatan Sidharjo.

CHAPTER 4 FUNDING ASSISTANCE FROM WONOGIRI DAM BENEFICIARIES FOR WATERSHED MANAGEMENT

4.1 Introduction

The relative poverty of farming communities upstream of large dams and weirs is well known and those living in the Wonogiri catchment are no exception. They have no access to large scale irrigation schemes and so are mainly dependent on rain fed crops, livestock and remittances from relatives working in Jakarta. Those farming downstream, by contrast, benefit from irrigation provided from a reservoir occupying some 8,800 ha of upstream land, and can grow up to three crops annually. This inequity has long been a source of dissatisfaction for the upstream communities and has been discussed many times in workshops and other forums. But to date, nothing has been implemented.

4.2 Possible Scheme

One obvious solution is to transfer some of the benefit from downstream communities[63] to those upstream, preferably in cash or near-cash (e.g. cheques from private bank accounts), for use in watershed management and also, crucially, for some extra cash for the farmers concerned. It is understood that informal investigations have revealed a willingness on the part of some downstream farmers to part with some of their extra income. Sums of Rp.25,000 per hectare per year have been suggested by several beneficiary farmers. However, a more comprehensive but tactful survey would be needed to establish a more realistic figure.

Assuming the 235 villages and 204,000 farmers in the Wonogiri catchment, and that each downstream farmer contributes Rp.25,000/ha/year, the maximum receipts per upstream village would be about Rp.3.2 million and per upstream farmer would be Rp.3,676. There is much to be decided here. Clearly, it would be simpler for the scheme to distribute money to villages and rely on village level agencies to distribute equitably to individual farmers. The money should be used as far as possible on soil conservation measures which are currently unfunded.

4.3 Scheme Requirements

Some basic requirements for such a scheme would include:

- One agency[64] to be responsible for the transactions: collection (whether in cash or, preferably, via bank accounts), deposits, and redistribution (whether in cash or, preferably, via bank accounts) to (a) specific watershed schemes or projects and (b) individual recipient farmers;
- Audited transparent transactions for inspection by the farmer groups involved;
- Agreed rosters of participating donor and recipient farmers;
- Extensive socialization of the scheme by the responsible agency;
- A survey of downstream beneficiary farmers to establish amounts to be contributed;
- A legal agreement would be needed from downstream farmers specifying their obligations and any force majeure conditions for non payment.

[63] There are about 45,000 downstream farmers on about 30,000 ha of productive land taking water from the Wonogiri irrigation scheme. Upstream there are about 204,000 farmers [source: Village survey data of 2003] living in 235 villages with a total population of about 815,000 in the Wonogiri Dam catchment.

[64] Kabupaten Wonogiri BAPPEDA (Badan Perencanaan Pembangunan Daerah / Regional Development Planning Agency) was initially suggested but was rejected by Kabupaten Wonogiri. Further options are recommended in Chapter 5 of this Annex 11.

4.4 Suggested Implementation Tasks

Some stages for getting the scheme off the ground would include:

- Preliminary approval (in principle) from Wonogiri Bupati, the concerned Kabupaten Wonogiri Dinas, the Governors of East and West Java
- A detailed costed plan for installing, operating and funding the scheme;
- Agreement of the plan from those expected to fund it;
- Socialization of the scheme;
- Survey of downstream farmers.

For further information on the feasibility of these tasks, see Chapter 5 of this Annex 11.

CHAPTER 5 FEASIBILITY STUDY FOR WATERSHED MANAGEMENT

5.1 Introduction

This chapter is concerned with the selection, description, justification and implementation of institutional projects in watershed management.

5.2 Selection of Projects

In the Interim Report, the institutional study set out eleven Master Plan recommendations to address a number of identified issues. From these, four (in three groups) have been selected as most suitable for the feasibility study, and also required detailed prior discussion with the relevant stakeholders:

(i) Funding assistance from Wonogiri dam beneficiaries for watershed conservation activity in the Wonogiri Dam catchment;

(ii) A pilot implementation of a committee to coordinate watershed management in the Wonogiri Dam catchment;

(iii) Strengthening the forestry sub-dinas in Kabupaten Wonogiri;

(iv) Strengthening the agriculture dinas in Kabupaten Wonogiri.

The rationale for their selection was simple. With the possible exception of (i), they were judged to be the most likely to contribute to an earliest improvement to the condition of the watershed.

In addition, a further three recommendations, simpler to implement and not needing detailed prior discussion with government or stakeholders, were also chosen, namely:

(v) Inclusion in mission statements of watershed management responsibilities;

(vi) Transfer of more funds from central government to kabupaten government for capacity building purposes;

(vii) Implementation of Training Needs Analysis, especially for field staff.

In the following sections, each recommendation is expanded in more detail than in the Interim Report. Additional information provided by government and other stakeholders is included where relevant to assist implementation. Strengths and weaknesses of the four main recommendations are briefly assessed and next implementation steps proposed.

The following agencies and individuals were consulted in the review of these recommendations:

Director of BPSDA, General Manager and staff PBS, Head of Programming BPDAS Solo, Secretary of Kabupaten Wonogiri and Heads of BAPPEDA, Forestry, and Agriculture in Kabupaten Wonogiri.

5.3 Funding Assistance from Wonogiri Dam Beneficiaries

5.3.1 Background

The introduction to Chapter 4 (Funding assistance from Wonogiri Dam Beneficiaries for Watershed Conservation) provides the rationale for the proposed scheme.

The scheme proposes the annual transfer of some of the Wonogiri dam benefit from downstream farmers[65] to those upstream, preferably in cash or near-cash (e.g. cheques

[65] There are about 45,000 downstream farmers on about 30,000 ha of productive land taking water from the Wonogiri irrigation scheme. Upstream there are about 204,000 farmers [source: Village survey data of 2003] living in 235 villages with a total population of about 815,000 in the Wonogiri Dam catchment.

from private bank accounts), for use in formally established watershed conservation projects and, if possible, for some extra cash for the farmers concerned. As reported in Chapter 4, informal investigations have shown a willingness by a few downstream farmers to part with some of their extra income. Sums of Rp.25,000 per hectare per year have been suggested by the beneficiary farmers interviewed[66]. Clearly, a comprehensive survey would be needed to establish a more robust figure[67].

The scheme should distribute collected money to upstream villages and rely on village or sub village level agencies to distribute equitably to watershed conservation projects and, if appropriate, individual farmers, although this is less likely. The money should be used as far as possible on formally planned soil conservation measures which are currently unfunded.

5.3.2 Scheme Requirements and Possible Sequence of Actions

The basic requirements for such a scheme (in rough chronological sequence) would include the following. Possible agencies to be responsible overall are suggested.

(1) Preparation

(i) After acceptance of the final report, the proposed scheme should be discussed in some depth with the decision-makers, especially Bupatis of the concerned kabupaten and the Governor of Central java Province, to obtain agreement in principle. (Suggested overall responsibility: PBS).

(ii) Surveys of downstream farmers (i.e. those benefiting from Wonogiri dam irrigation) and upstream farmers (i.e. those expected to receive benefit transferred from beneficiaries downstream, either in kind or, possibly, in cash). These would establish (or confirm) basic farmer data such as name, area of farm, willingness to participate in the transfer scheme without commitment at this early stage. Surveys could be carried out by WUAs or farmer groups and would provide formally established and agreed rosters of participating upstream and downstream farmers. (Suggested overall responsibility: PBS as Implementing Agency plus WUAs / P3As).

(iii) Extensive socialization of the proposed scheme to downstream and upstream farmers. Suggested overall responsibility by: PBS plus WUAs or farmer groups.

(iv) MOUs or similar legal agreements between farmers and collecting / distributing agencies, and specifying, for downstream farmers, their payment obligations and any force majeure conditions for non-payment. (Suggested overall responsibility by: PBS)

(v) A detailed costed plan for installing and operating the scheme should be prepared. The plan should be agreed by those expected to fund start up and ongoing costs. (Suggested overall responsibility by: PBS)

(vi) Final approval of the scheme by Governor of Central Java and Bupatis of all concerned kabupaten[68]. This assumes that Kabupaten Ngawi in East Java province would not participate in the scheme. A formal agreement among the other downstream kabupaten to collaborate with the scheme should be established. (Suggested overall responsibility by: PBS)

[66] According to 2002 data, the gross annual average farm income in the Wonogiri irrigated area was Rp.7.6 million. From an average farm area of about 0.67 ha, the annual contribution would be a very modest Rp.16,700. This is only some 0.2% of gross annual average farm income.

[67] Assuming there are 235 villages and 204,000 farmers in the Wonogiri catchment, and that each downstream farmer contributes Rp.25,000/ha/year, the maximum receipts would be: Rp.750 million (about USD83,000); per upstream village would be about Rp.3.2 million; and per upstream farmer would be about Rp.3,676.

[68] Upstream: Wonogiri. Downstream: Sukoharjo, Klaten, Surakarta, Karanganyar, Sragen.

(2) Planning and Budgeting

(i) A watershed management / conservation plan, probably annual but could be more frequent, giving a program for the conservation of the entire Wonogiri dam catchment for the year in question. The plan should be prepared within the framework of medium (say five years) and long term (say 20 years) strategic watershed conservation plans for the catchment. The annual plan should be costed as accurately as possible and should include conservation projects and costs from the agriculture sector. (Suggested overall responsibility by: BPDAS Solo).

(ii) Funding for the annual Wonogiri watershed conservation plan should be sought first from conventional sources, for example, local government and other local sources, provincial government, national government. The value of this financial support should be subtracted from the gross cost to give a net funding requirement for the scheme. (Suggested overall responsibility by: BPDAS Solo)

(iii) This net amount could then be divided between the downstream farmers (probably only in Central Java to avoid the complication of cross-province transactions for only one kabupaten (Ngawi) where delivery of irrigation water is least reliable) who have been identified by the comprehensive survey mentioned above. This division should be on some fair basis to be agreed with farmers; for example, according to farm area or farm income (more difficult to verify). (Suggested overall responsibility by: BPDAS Solo)

(3) Collection, Deposit and Distribution of Funds

(i) One agency [69] should ideally have overall responsibility for all transactions: collection (whether in cash or, preferably, via bank accounts); deposits to bank(s), and redistribution (whether in cash or, preferably, via bank accounts) to (a) specific watershed schemes or projects and (b) individual recipient farmers (possible but less likely). As BAPPEDA was rejected, another candidate in local government could be Kabupaten Dinas Finance, as money transactions are involved. Or a suitable NGO with relevant capability and experience: PERSEPSI is probably the best qualified for this demanding task, its workload permitting. Or, possibly, the Central Java province office of Agriculture (as farmers in several kabupaten are involved). Overall, the NGO option is probably the best, working in conjunction with Wonogiri Kabupaten Dinas Finance. (Summarizing, the suggested overall responsibility would be by: Central Java Finance; execution by Kabupaten Wonogiri Finance plus NGO (say PERSEPSI).

(ii) The choice of bank or banks to handle the transactions is important. Ideally, the chosen bank(s) should have numerous branches, be trusted and experienced by farmers, and be competent and reliable. One bank appears to answer these criteria while being government owned: Bank Rakyat Indonesia (BRI - Indonesian Peoples' Bank). This bank is used by wealthier farmers, supplies credit to farmers, and is employed by GOI for distributing payment to farmers. However, the final choice should be made by Kabupaten Wonogiri Finance and approved by Central Java Dinas Finance after consultation with farmer representatives. Bank accounts should be opened for established farmer groups in sub villages rather than villages, to ensure responsibility is devolved to the lowest feasible level.

[69] Kabupaten Wonogiri BAPPEDA was suggested for this task but was rejected by a discussion meeting in Wonogiri on 26 September 2006. The reason given was that BAPPEDA is for planning & monitoring, not for managing a large financial project.

(iii) The actual collection, from farmer to bank according to pre-arranged calculations and agreements, could be handled by farmer groups based in each sub village. Another possibility would be to use a village level body, LPMD[70], although this tends to be less trusted by farmers than their own farmer groups. Distribution would be the task of representatives of authorized farmer groups or other bodies responsible for watershed conservation projects.

(iv) The bank should provide statements of transactions for inspection by the farmer groups involved. Suggested overall responsibility for (iii) and (iv) by: Central Java Dinas Finance; execution by relevant Kabupaten Dinas Finance.

5.3.3 Benefits and Risks

(1) Benefits

(i) The scheme is an equitable way to balance dam benefits and costs between upper watershed farmers and dam beneficiary farmers in irrigated areas, assuming that scheme is implemented fairly (which cannot be guaranteed).

(ii) Communication should improve between upstream and downstream areas; and

(iii) There should be some reduction in government expenditure.

(2) Risks

(i) Logistics are relatively complex which increases the possibility of transaction errors;

(ii) The scheme will be costly to operate because of the large number of small farmers (and plots) in both upstream and downstream areas;

(iii) Benefits to be transferred are unlikely to be more than Rp.3.2 million per upstream village and could be less in practice depending on the results of the survey. These are small amounts compared to the overall cost of watershed management and the complex logistics involved.

5.3.4 Next Steps

It is clear from the above text that this is an ambitious scheme. It would involve up to 250,000 farmers as well as government agencies in forestry, agriculture and finance in up to seven kabupaten in Central Java, and in Central Java Province itself, and one or more NGOs. Therefore implementation will require a significant amount of further design work, costing and consultation.

It is therefore recommended that a further investigation should be undertaken by those with a thorough knowledge of upstream and downstream farmers and community organizations. The purpose would be to establish certain necessary aspects in more detail than could be achieved in this countermeasures for sedimentation study, including the following:

(i) Consideration of whether a pilot scheme involving only a small percentage of upstream and downstream farmers is desirable and feasible, and if so which farmers should participate;

(ii) Consideration of whether the whole exercise should be managed as a separate project under PBS (or the recently established Balai Besar Wilayah Sungai Bengawan Solo);

(iii) The logistics and methodology of the farmers' surveys and socialization of the scheme, confirmation of those who should organize and carry them out;

(iv) The nature and content of the MOUs or legal agreements between the various parties

[70] Lembaga Pembangunan Masyarakat Desa

in the scheme;

(v) Planning start-up and operations, including banking arrangements;

(vi) Estimation of scheme start-up and operating costs;

(vii) The linkage between the beneficiary funding scheme and WC3, the proposed watershed management coordination committee (see Section 5.4);

(viii) Consideration of whether contributing beneficiaries should include other downstream water users such as PLN, PDAMs, industrial concerns etc.

5.4 Coordination Mechanism for Watershed Management

5.4.1 Rationale

Chapter 3 Section 3.3.8 identifies the need for improved coordination of a) watershed management (WM) in upstream catchments like that of Wonogiri Dam (to reduce sedimentation) and b) WM with WRM[71] in river basins generally. This problem is being addressed nationally by the GN-KPA movement (see Chapter 3 Section 3.2.4 for more on this topic). However, in the Wonogiri Dam catchment it is essential to rapidly improve the quality of watershed management, especially in cultivated plots, to halt the inflow of sediment into the reservoir. For this, the Study team recommends, among other things, a Wonogiri Watershed Conservation Coordination Committee (WC3), to be implemented as soon as possible.

5.4.2 Membership, Responsibilities and Start-up

The purpose of WC3 would be to coordinate the planning, implementation, monitoring and evaluation of all watershed management (or conservation) in the Wonogiri Dam watershed. This would be done using the responsible local government agencies and assisted by stakeholders representing the main interests in the area or who can provide technical advice and support. Only stakeholders with interests in the Wonogiri catchment would be allowed to vote on decisions. Technical or other advisers would have no vote. Initially, WRM activity would be excluded from WC3's remit in order to concentrate on watershed management and soil conservation.

It is not yet clear how and by whom the WC3 should be established as opinions vary. Some authorities say that the Ministry of Forestry should draft the legal product (as a Ministry Decree?) enabling WC3, under Law No. 41/1999. But presumably this would not include agriculture which is much more important than forestry in terms of sectoral sediment creation. Others (including Director BPSDA in Jakarta) say that national legislation and approval is not necessary (although the Bengawan Solo river is strategic and crosses two provinces – East and Central Java) because the Wonogiri catchment is only a small part of the entire basin. A clear-cut ruling has not yet been obtained by the Study team.

WC3 would report administratively to Wonogiri Bupati and technically to BPDAS Solo. There should be some (unspecified for now) linkage to the local, presumed functional, PPTPA.

Members of WC3 should include a senior representative from:

- BAPPEDA, BPDAS Solo, Kabupaten Forestry Service, Kabupaten Agriculture Service, Kabupaten Environment Service, Perum Perhutani (from KPH Surakarta), PJT I Bengawan Solo, Balai PSDA,

together with one representative from each of the following stakeholder groups:

[71] Coordination of WRM should be carried out by PPTPA (basin level) and PTPA (province level), although not all are fully functional.

- Major landowners, farmer group representatives, community representatives, PLN, a competent local NGO, a University teaching and conducting research in watershed conservation (e.g. University of Gadja Mada). There may be other stakeholders who should be included.

Kabupaten Pacitan should provide some two members (amounting to about 10% of members, which is very roughly equivalent to Pacitan's proportion of Wonogiri catchment's surface area): one government and one non-government.

Non-government stakeholder representatives would be selected from volunteers by a working group of heads of the involved Kabupaten dinas and Sub-dinas, as well as the Kabupaten Secretary, according to agreed criteria.

The following are suggested for official positions:

- Bupati of Kabupaten Wonogiri as Chairperson,
- Head of Wonogiri Bappeda as Deputy Chairperson, and
- Head of BPDAS Solo as Secretary. BPDAS should provide a secretariat.

The lead role of BPDAS Solo in WC3 assumes that this agency has a detailed knowledge of the catchment and is willing and able to plan, monitor and evaluate all watershed conservation activity (or inactivity), especially that of the Agriculture Service, with the help of the relevant Kabupaten body.

In line with *otonomi daerah* and community empowerment, it is important that farmers and other members of the community participate fully, through their representatives, in the work of Wonogiri WC3.

A special budget for Wonogiri WC3 should be created, funded and administered by BPDAS Solo. WC3 members should meet at least once every 3 months and more frequently in the early stages.

The annual plan would be prepared by BPDAS in conjunction with forestry, agriculture, PJT1 Bengawan Solo and maybe other committee members. Monitoring and evaluation would be done by BPDAS with help from the appropriate Kabupaten agency. Plans, implementation, and results of M&E would be discussed with WC3 members so that everyone knows what is proposed and determined, and has a chance to comment and object.

These proposals have been largely agreed by BPDAS Solo, at the concept stage.

5.4.3 Potential Benefits and Risks from WC3

Potential benefits could include:

(i) Improved condition of the watershed and therefore reduced sediment run-off into the dam reservoir;

(ii) Better interaction between government units responsible for watershed management and stakeholders with various interests in the watershed;

(iii) Ability of stakeholders, at least in theory, to influence watershed management in their interest.

Potential risks could include:

(i) WC3 ineffectiveness due to: lack of leadership and support from top officials; lack of commitment and willingness to cooperate from members; lack of funds; and, most likely if not watched carefully, lack of WC3 attention to physical implementation of watershed conservation measures, especially in cultivated areas.

5.4.4 Next Steps

As soon as possible the appropriate agency at the appropriate level for drafting and progressing WC3 enabling legislation should be identified. When the final report is approved, and the WC3 recommendation is agreed, legal drafting should begin without delay. Hopefully by this time, the Presidential Decree and Ministry of Public Works Decree on coordination of water resources management at various levels of government, both now in draft, will have been issued. Linkages with GN-KPA coordinating activity in the catchment should be established. (A GN-KPA coordinating project involving about 9 villages in Kabupaten Wonogiri is to begin from January 2007. It is understood that PERSEPSI, the NGO, will contribute. See Chapter 3, Sub-section 3.2.4(11) for more information.)

5.5 Strengthening Local Government

It is recommended in Chapter 3 Section 3.3.2 above that Dinas Agriculture and Sub-dinas Forestry should be strengthened by increasing resources of funds, staff and equipment, and by putting more emphasis on field staff training. These recommendations are all selected for the Feasibility Study and are summarized with some additional information below.

5.5.1 Forestry

(1) Organization

The Sub-dinas Forestry should be upgraded to a full Dinas for the following reasons:

(i) The vital importance of watershed management and soil conservation at the local level would be more fully recognized thereby thus facilitating its work. Out of a total kabupaten land area of 182,236 ha, some 51,000 ha (28%) is estimated to be either moderately critical or very critical, all requiring urgent action,

(ii) Forestry is the largest sub-dinas in Dinas LHKP[72] and needs to grow considerably larger if it is to effectively impact the present erosion problems. This was confirmed at a recent meeting[73] of Kabupaten Wonogiri heads of Forestry, Agriculture and Planning, convened to provide more information for selected projects.

(iii) A major increase in forest cover is needed to move from 11% towards the desired 30% of total area.

At the time of preparing this draft final report, it is understood that this recommendation had already been submitted to Bupati and the DPRD[74] together with other changes to Dinas LHKP requested by kabupaten management. These changes included (a) the transfer of Plantations from Agriculture to Forestry and (b) the creation of separate dinas for both Environment and Mining. The transfer of Plantations to Forestry is endorsed by the Study team.

(2) Staffing

(i) Discussions with the Forestry Sub-dinas suggest that the number of field staff (coordinators and PKLs[75]) should be doubled from the present 60 to 120, to undertake the necessary work in the areas of forest development, production, industrial processes, and community development. Additional staff would be concentrated in the catchments of the 4 rivers[76] receiving and delivering the most

[72] Dinas Lingkungan Hidup, Kehutanan dan Pertambangan – Environment, Forestry and Mining Services
[73] Held on 26 September 2006.
[74] Dewan Perwakilan Rakyat Daerah – District House of Representatives
[75] Penyuluh Kehutanan Lapangan – field forestry extension worker
[76] Keduang (in particular), Tirtomoyo, Temon, Upper Solo (Solo Hulu)

sediment. Each PKL should be allocated to a fixed area for which he or she is solely responsible. Office staff could be reduced from the present 20 to 15.

(ii) Forestry management says that field staff capability is adequate but more training is needed so that field personnel can work more effectively with less supervision. However, other sources have criticized the effectiveness of forestry field staff. Either way, it seems that more training and probably more supervision in the field is needed. Formal training courses are provided from Girabon Forestry Training Center in West Java. These should be supplemented by on-the-job training from the Sub-dinas head.

(iii) The training needed for existing field staff should be determined as soon as possible by Training Needs Analysis (TNA) (see Section 5.7.3 below) and implemented before any additional staff are acquired.

(3) Equipment

More office equipment is needed especially for mapping and surveying. Both activities can be outsourced but, it is estimated, can be done more cheaply in-house while adding to staff expertise and work variety, thus improving morale.

(4) Budgets and funding

The 2005 budget for capital and operating expenditure (excluding salaries) was reduced from a requested Rp.852 million to an actual Rp. 368 million, a shortfall of 484 million and a reduction of 57%. Four[77] of the 9 expenditure categories received no funds, two[78] received reduced funds, and only three (village seedling garden, erosion and sedimentation countermeasures, and improvement of primary wood industry) received the funds requested.

Forestry budgets should be fully funded, wherever possible.

(5) Potential benefits and risks

Potential benefits could include:

(i) The higher profile and better funded Dinas Forestry, comprising better trained existing and additional field staff, and more productive office personnel, should be able to overcome progressively the outstanding problems of the watershed; for example the reclamation of some of the critical land in the Wonogiri catchment.

Potential risks could include:

(i) The improved and enlarged field staff and reduced office staff may not be employed productively due to weaknesses in Dinas Forestry management. Both head of Dinas and Bupati should objectively and routinely assess the quality of management and adopt the measures needed to improve this.

(6) Next Steps

Along with the anticipated upgrade of the Forestry Sub-dinas, the assessment of the training needs of the existing field staff (coordinators and PKLs) should be started soonest. This should be done by the sub-dinas (or dinas) head, advised by a human resources specialist, preferably from provincial government, with experience in TNA. The necessary training should then be provided, after which the total staff needs should be carefully re-assessed and approved, and action taken to obtain the additional field staff required.

[77] People's forest development, castor oil development, economic and other assistance to forest community.
[78] Training for forest community, trade development assistance for forest community.

5.5.2 Agriculture

(1) Vision and Mission Statement

The Vision (and Mission Statement) for the Agriculture Service must include a specific reference to soil conservation and sustainable land management, not the case at present. This important addition should be accompanied by a much greater emphasis on watershed conservation in all agricultural activities. At present, as reported in Chapter 2 Section 2.4, it seems that there is virtually no legislation dealing with watershed conservation in agricultural work, which must be linked to the criticism of PPLs reported in paragraph (2) below.

(2) Staffing

As for forestry, field staff are estimated to be fewer than needed due to budget limitations. There are currently 118 staff to service 294 villages, the total number in Kabupaten Wonogiri. Ideally, there should be one extension worker per village. Failing this, a minimum of 40 additional PPLs[79] is considered necessary for adequate cover. However, existing PPLs have been strongly criticized[80] for the lack of effort put into watershed conservation. Production is said to be the exclusive objective. This suggests that there is much to be done to improve watershed management in the agricultural sector.

(3) Training

Agriculture managers estimate that most staff would benefit from general refresher training. As part of this or in addition to it, a program of training for existing field staff (and probably higher levels also) on watershed conservation best practice is urgently needed. Such training should be given to existing PPLs before recruiting more.

(4) Equipment

There is a shortage of functional computers (10 more are needed, some to replace old models). Also needed are a rainfall gauge and ubinan equipment for agricultural production.

(5) Budgets and funding

Past Agriculture Services budgets have usually been under funded. For example, in 2005, data (see Chapter 3 Section 3.3.3(7)) shows that only 41% of the planned expenditure could be funded. Public Services suffered a particularly savage reduction of 73%. Thus, to fully fund the planned expenditure in 2005, a further Rp.15 billion would have been needed for this Dinas. It is imperative that the budget, at least for watershed conservation activities, is fully funded in future.

(6) Potential benefits and risks

Potential benefits could include:

(i) More references to policy and practice concerning soil conservation in legal products and manuals at all levels of government.

(ii) Better soil conservation practice by farmers due to more effective farmer training and extension by more and better trained Agriculture Services field staff, and therefore less sediment flowing into the reservoir.

Potential risks could include:

(i) The improved and enlarged field staff may not be employed productively due to weaknesses in Dinas Agriculture management. Both head of Dinas and Bupati

[79] Penyuluh Pertanian Lapangan – field agriculture extension worker.
[80] By BPDAS Solo, among others.

should objectively and routinely assess the quality of management and supervision, and should adopt the measures needed to improve this.

(7) Next Steps

The important first step is to carry out an assessment of training needs among the existing field staff (PPLs and coordinators) as for Sub-dinas Forestry. This should be done by the dinas head, advised by a human resources specialist, preferably from provincial government, with experience in TNA. The necessary training should then be provided, after which the total staff needs should be carefully re-assessed and approved, and action taken to obtain the additional field staff required.

5.6 Law Enforcement

The recommendation for tackling the lack of law enforcement in the Wonogiri watershed (see Chapter 3 Section 3.6 Table 3.6.1) was not selected for the Feasibility Study. Instead, it is strongly recommended, without the formal establishment of a task force, that all managers and staff in Kabupaten Wonogiri from the Bupati down to the cleaner, both observe the law and enforce it. This is especially necessary in State forests, where it seems that illegal activities continue without hindrance.

5.7 Other Recommendations

5.7.1 Vision and Mission Statements

To raise the profile of watershed management, Vision and Mission Statements of all forestry (including the State Forestry Company) and agriculture agencies at all levels should state clearly the responsibility of the agency concerned for watershed management and soil conservation.

5.7.2 Transfer of Resources from Central Government to Local Government

Sufficient funds should be transferred from Central Government to allow adequate capacity building in the Sub-dinas Forestry and Dinas Agriculture, Kabupaten Wonogiri.

In addition, Kabupaten Wonogiri and Central Java Province should make serious and systematic efforts to raise money from cost reduction (e.g. labor costs too high) and business development.

5.7.3 Staff Training

All managers – especially in Kabupaten Forestry and Agriculture – should formally review the competence and level of training of each member of their staff against what is needed for that job and preferably specified in a job description (this is Training Needs Analysis).

From this exercise, the training (or other action) needed should be determined individually by the manager concerned (with help from HR specialists if necessary), reviewed with others in the group, prioritized and later programmed according to greatest benefit for the individual and the group. Training should then be given as programmed.

CHAPTER 6 ORGANIZATION OF PROJECT IMPLEMENTATION

6.1 Executing and Implementing Agencies

The executing agency at national level for implementing projects resulting from the Study will be the Directorate General of Water Resources (DGWR) of the Ministry of Public Works (MPW). At the site level, the Bengawan Solo River Basin Development Project (PBS)[81] will act as implementing agency.

6.2 Steering Committee and Technical Working Groups

The Steering Committee and Technical Working Groups that supervised and advised on the Study should continue to provide supervision and support during the implementation stage. The Steering Committee will comprise senior officials from central government agencies concerned with the projects to be implemented and will supervise project activities overall. Technical Working Groups will consist of members of central and regional government agencies and will monitor progress and provide support in each main technical area of work, summarized below.

The member agencies of the above groups are proposed in the following table:

Table 6.2.1 Member Agencies of Steering and Technical Working Groups

Steering Committee	Technical Working Groups
a. Ministry of Public Works, represented by DGWR b. BAPPENAS (National Planning Board) c. Ministry of Forestry d. Ministry of Home Affairs e. State Ministry of Environment f. Ministry of Agriculture	<u>Watershed Conservation</u> a. Ministry of Public Works represented by DGWR b. Ministry of Forestry c. Ministry of Home Affairs d. State Ministry of Environment e. Central Java Province f. Wonogiri District <u>Sediment removal system and structural and operational countermeasures for sediment in the dam</u> a. Ministry of Public Works represented by DGWR b. State Ministry of Environment c. Bengawan Solo River Basin Development Project d. PJT-1 e. Central Java Province f. Balai PSDA Bengawan Solo <u>Institutional</u> a. Ministry of Public Works represented by DGWR b. Ministry of Forestry c. Ministry of Agriculture d. Ministry of Home Affairs e. State Ministry of Environment f. Bengawan Solo River basin Development Project g. PJT-1 h. Central Java Province j. Wonogiri District

6.3 Projects for Implementation

The Wonogiri Study proposes the following projects for implementation. An indication of the required phasing is also given:

[81] This project organization should be absorbed by the new Balai Besar Wilayah Sungai Bengawan Solo.

Table 6.3.1 Phasing of Proposed Countermeasures for Wonogiri Reservoir Sedimentation

Implementation Phasing	Purpose
1. Urgent Countermeasures	* *Maintain proper intake function*
a. Compartmented reservoir with new flushing gate	* Pass through and flush out inflow of sediment and garbage from Keduang River
b. Watershed management in Keduang catchment	* Mitigate sediment yield in the Keduang catchment and thereby reduce sediment flow into the reservoir
c. Periodic maintenance dredging at intake	* Avoid blocking at intake due to sediment deposits and garbage
2. Institutional – urgent measures	* *Help improve condition of Wonogiri watershed*
a. Beneficiary funding of Wonogiri watershed management	* Improve conservation of Wonogiri watershed to reduce sediment flow into reservoir
b. Formation of Wonogiri Watershed Conservation Coordination Committee (WC3)	* Facilitate coordination of several agencies in watershed management thereby improving condition of watershed
c. Strengthening government of Kabupaten Wonogiri	* Improve impact of forestry and agriculture field workers on watershed quality
3. Mid Term Countermeasures	* *Maintain proper functioning of Wonogiri Reservoir*
a. Watershed management in other tributaries	* Mitigate sediment yields in other tributary catchments and thereby reduce sediment flow into the reservoir
4. Long Term Countermeasure	* *Maintain proper functioning of Wonogiri Reservoir*
a. Rehabilitation of watershed management areas	* Maintain proper functioning of the conserved Wonogiri watershed

6.4 Project Management Organization

The diagram in Figure 6.4.1 below outlines the proposed project management organization down to district level to implement the above projects.

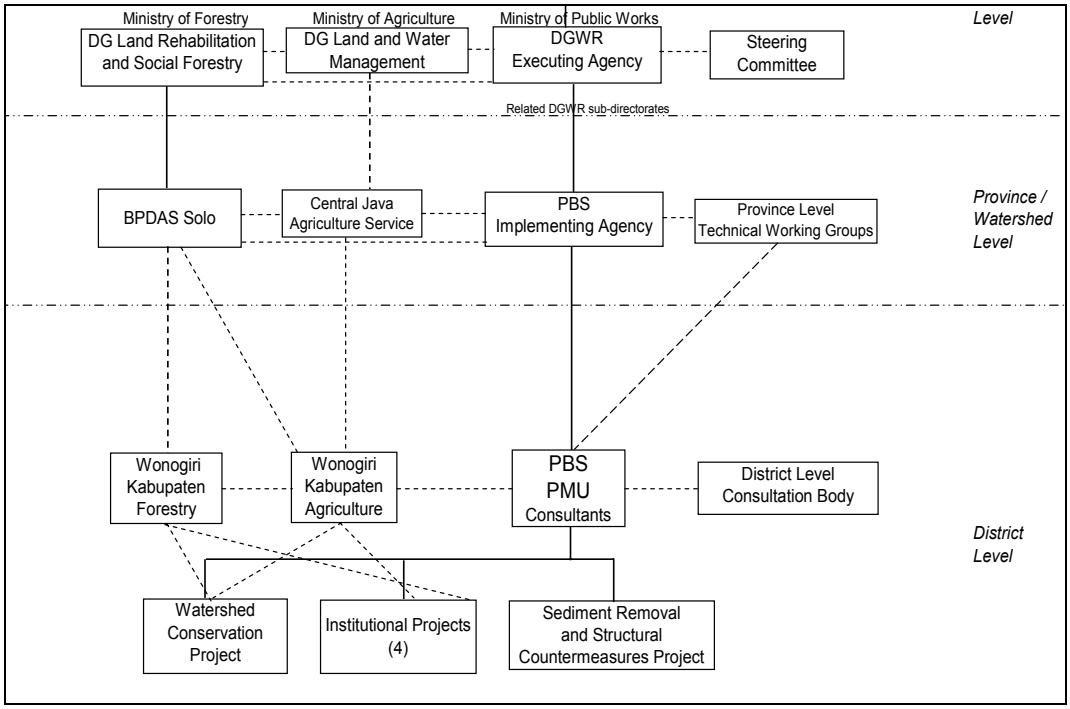


Figure 6.4.1 Project Management Organization

DGWR as executing agency would be assisted by related bodies such as Sub-directorate of Implementation for the Western Region. The DG Land Rehabilitation and Social Forestry would exercise overall control of forestry activities through BPDAS Bengawan Solo, as would DG Land and Water Management through the Central Java Agriculture

Service for agricultural activities. This would be done in accordance with the Memorandum of Understanding (MOU) described below.

At the outset, a MOU should be signed by DG level agencies from the Ministries of Forestry and Agriculture and DGWR agreeing to overall project management by DGWR/PBS on terms specified in the MOU. This agreement would then be made known to Central Java Province and Wonogiri Kabupaten forestry, agriculture and public works services.

A Project Management Unit (PMU) under the direct control of the implementing body, PBS, would be responsible for the day-to-day supervision and coordination of the three constituent projects: Watershed Conservation, Sediment Removal and Structural Countermeasures, and Institutional. PBS would appoint a project manager and support staff for the PMU.

These projects would be managed as follows:

(i) The Watershed Conservation Project by a representative from BPDAS Solo in conjunction with Wonogiri Kabupaten Forestry and Wonogiri Kabupaten Agriculture. The BPDAS Solo representative should be in the PMU;

(ii) The Sediment Removal and Structural Countermeasures Project by a representative from PBS who would also be in the PMU; and

(iii) The Institutional Project by component managers as follows:

a) The Funding Assistance from Wonogiri Dam Beneficiaries component would, if the Study team recommendations are adopted, require the mobilization of a more detailed feasibility study. This should be managed by PBS with the support of DGWR;

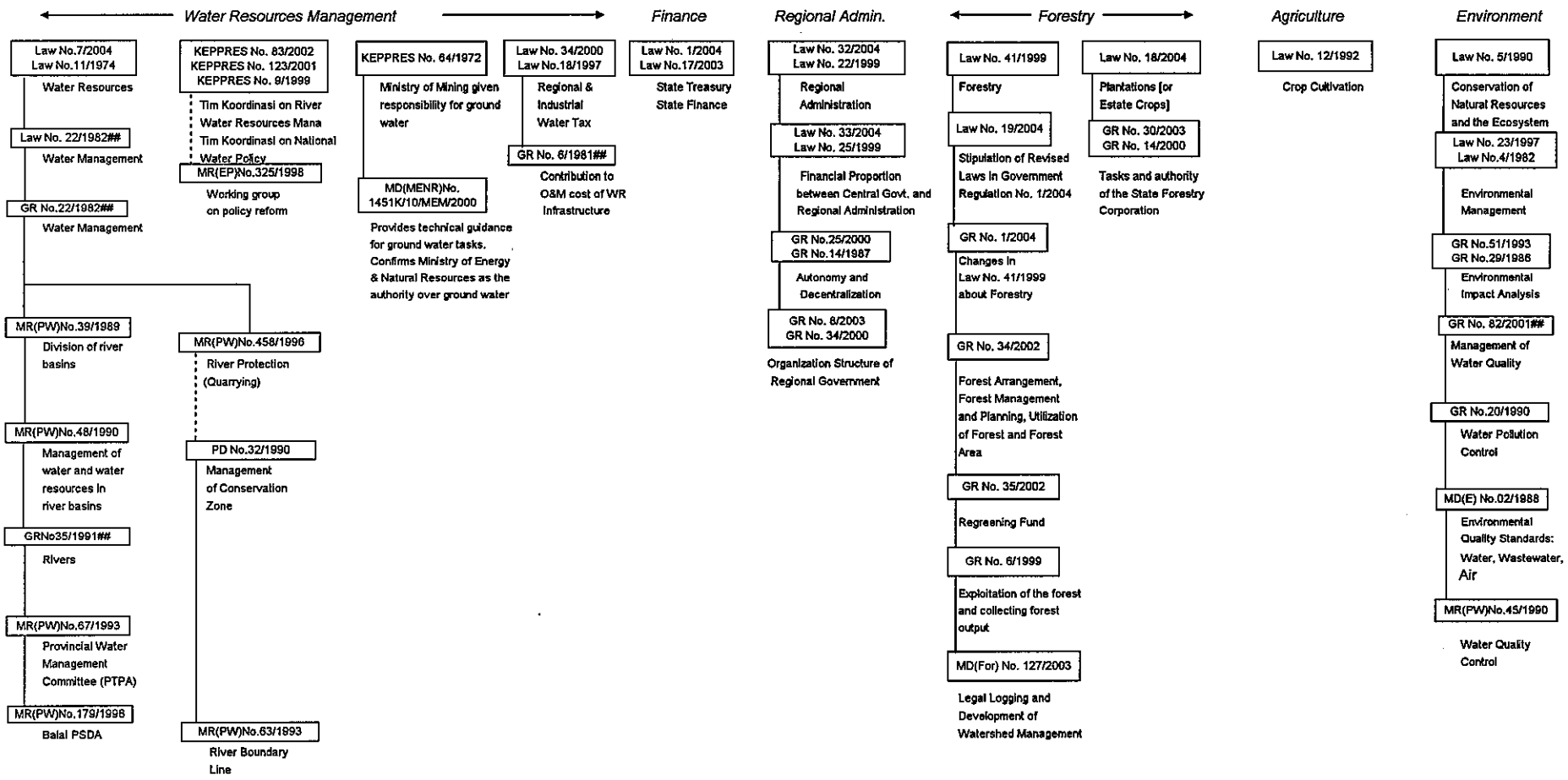
b) The Wonogiri Watershed Conservation Coordination Committee (WC3) component would be implemented by BPDAS Solo in conjunction with Kabupaten Forestry and Agriculture services. Kabupaten Pacitan as well as Wonogiri would be involved;

c) The Strengthening Local Government - Forestry component would be implemented by the Head of Kabupaten Forestry supervised by Bupati and Central Java Forestry;

d) The Strengthening Local Government - Agriculture component would be implemented by the Head of Kabupaten Agriculture supervised by Bupati and Central Java Agriculture.

Chapter 5 in Sections 5.3 to 5.5 provides some guidance on the immediate steps to be taken in implementing the institutional project.

Figures



KEY
= Being revised KEPRES = Presidential Decree Pres. Ins. = Presidential Instruction GR = Government regulation
MD = Ministry Decree MR = Ministry Regulation PD = Provincial Decree
HA = Home Affairs PW = Public Works EP = Environmental Protection ??? E = Environment

Figure 2.1.1 Principal Central Legislation concerning Watershed Management

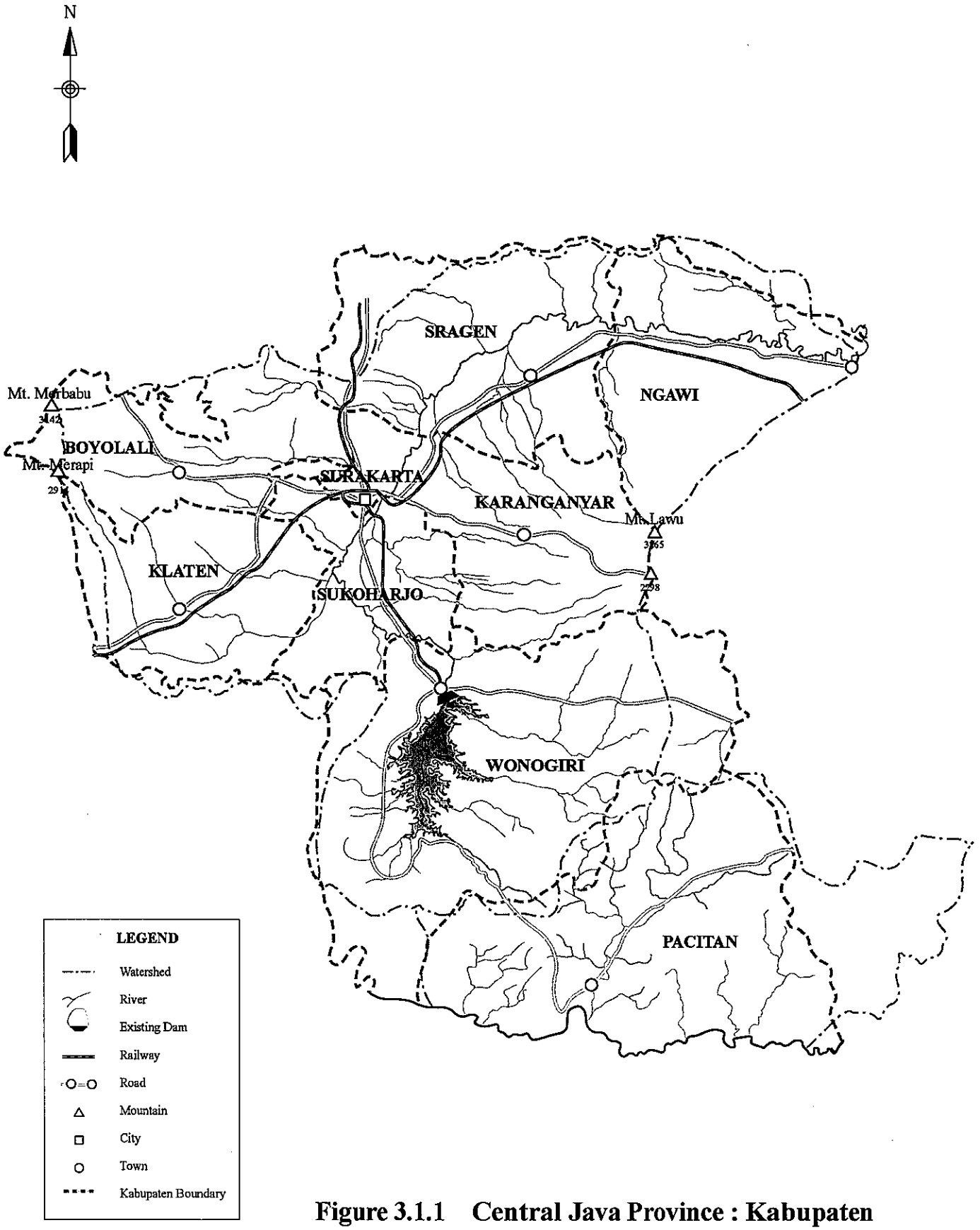


Figure 3.1.1 Central Java Province : Kabupaten and Watershed Boundaries