

2.9.3 Education and Citizenship

2.9.3.1 Education

(1) Present Condition

1) Education in N'djili

a) Schools

The primary and secondary education system of DRC consists of six years of primary education and six years of secondary education. In the secondary education system, the first two years consists of basic compulsory subjects and the remaining four years cover specific subjects including vocational training subjects based on selected courses. There are 281 schools in the N'djili commune including one of the four institutes of Industrial Technology Institute (ITI) of Kinshasa, as shown in the table below. Many of the schools run their classes in two shifts (morning and afternoon).

Table 2.9.9 Education Facilities in the N'djili Commune

Education Facility	Number	Number
Primary School	Total	116
	Government	12
	Catholic	13
	Protestant	14
	Kimbanguist	2
	Islamic	1
	Fraternite	1
	Salvtiste	5
	Private	68
Secondary School	Total	83
	Government	11
	Catholic	5
	Protestant	12
	Kimbanguist	1
	Islamic	2
	Salvtiste	3
	Private	44
Tertiary School	University	3

Source : N'djili Commune Office

b) Public Schools

In the thirteen quarters, there are forty two primary schools and thirty one secondary schools, with a total of seventy three public schools in the N'djili commune.

c) Students

The number of students is 68,335 in primary school and 46,780 in secondary school. The enrolment rate for primary education is estimated for boys at 197.8% and for girls at 89.7%. As regards secondary education, the enrolment rate is estimated as 190.5% for boys and 73.0% for girls. The enrolment rates of both primary and secondary school for boys are significantly high and almost

twice that of the school age population. This may be due to a statistical data error or the possibility that a number of students enrolling into the schools are from the neighbouring communes.

Table 2.9.10 Number of Students in the N'djili Commune

Education Level	Gender	Number
Early Childhood Education	Total	4,596
	Boys	3,068
	Girls	1,528
Primary Education	Total	68,335
	Boys	45,414
	Girls	22,921
Secondary Education	Total	46,780
	Boys	31,992
	Girls	14,788

Source : N'djili Commune Office

d) Teachers

N'djili has approximately 2,600 teachers working in its 241 schools, including 7 pre-primary schools. 33 female teachers are included which account for 28.1% of total teachers.

e) ITI

The institute was founded during the Belgian colonial times. There are four profession courses. These courses consist of Mechanics (general and automobile) and Electric (wiring and industrial). The number of students is approximately 1,600 while teachers are 64. The target of ITI, which is under the jurisdiction of MEPSP, is to master basic engineering. About Fifty-five percent of students who have graduated go to this institute. ITI is an essential educational facility in order to help develop the industries in N'djili. ITI expects to achieve technical advancement, micro credit for enterprises and the procurement of equipments and tools.

f) School Tuition Fees Paid by Students

In theory, the Congolese State has set the school fees at FC100 per year. Nevertheless, students' parents pay what is called 'motivation contributions' for teachers to make up for the low wages paid by the government.

Table 2.9.11 Motivation Contributions to be paid Quarterly

	Primary	Secondary
School in Category A	USD 120 to 150	USD 150 to 270
School in Category B	FC 15,000 to FC 25,000	FC 40,000 to FC 80,000
School in Category C	FC 7,000 to FC 12,000	FC 15,000 to FC 45,000

Source: JICA Study Team Community Survey 2008

g) Colleges

The following are four colleges within the N'djili commune ;

CIDEP (Open University)

ISTC (Institut Supérieur des Techniques et de Commerce)

ISPAM (Institut Supérieur Panafricain de Management)

ISTA (Institut Supérieur des Techniques d'Aménagements)

2)Result of Household Survey

Problems in education are identified through a household survey and the CLD planning workshops and they include high school fees and poor conditions of the school facilities and equipment. Public education is basically free of charge. However, parents need to pay for some of the fees for the teachers to compensate for their low salaries. The fees are a heavy burden on the parents which make it difficult for them to continually send their children to school. Also, it seems to be a hotbed of corruption for teachers and headmasters.

Nearly half of school-going children spend 15-30 minutes to reach their schools. The average estimated time to reach their schools is more than 30 minutes (the schools are close to only one third of school-going children). The maximum time spent by the rest of the children is approximately one hour.

Approximately 38% of children of school age seem not to attend schools, due to high additional school fees or family problems. Many children tend to drop out of school even though the enrolment rate is high.

The major reason students drop out of school is the high school fees. This reason accounts for more than 80% of the dropouts in each quarter. Parent involvement is not only essential, but some type of informal education system is needed. It has been observed that the phenomenon of school dropouts has been affecting the majority of the N'djili commune quarters.

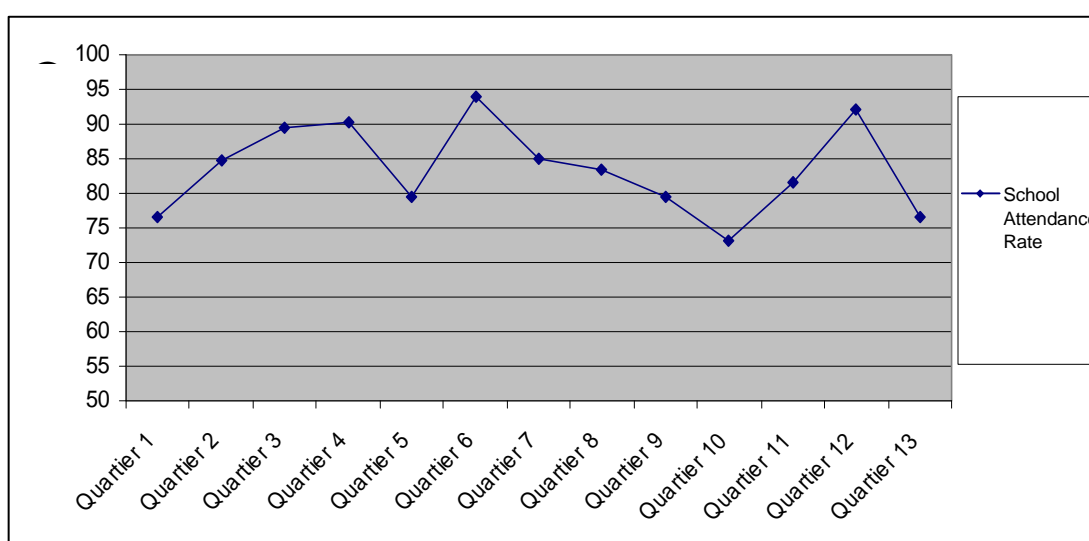


Fig. 2.9.21 School Attendance Rate

Source: Study Team Community Survey 2008

There are fewer dropouts during the school year compared to long term dropouts due to the accumulation of annual dropout rates. This phenomenon relates to 12.5% of children of school-going age. As far as gender is concerned, the distribution of dropouts during the school year is not gender-related; it applies to both boys (51%) and girls (49%). In the households, the probability of having a child who drops out of school during the current school year is at an average of 18% for boys and girls. Economic reasons are the main causes for school non-attendance among children of school-going age in the commune of N'djili (school fees account for 82%). Other personal reasons include illness, pregnancy and other unspecified reasons (accounting for a total of 18%; refer to Fig.2.9.25). Quantitative and qualitative reasons are similar to the commune of Kimbanseke (PAIDECO/CTB, 2007). In a comprehensive way, the causes are qualitatively and quantitatively similar with those of the commune of Kimbanseke (PAIDECO/CTB, 2007). The average gross schooling rate of the population attending school in the commune of N'djili is 83.4 %. This average is not significantly different from the average recorded in the commune of Kimbanseke (PAIDECO, 2007); whereas poverty reduction projections related to the national schooling averages have been established at 70.8% and 80% respectively in 2007 and 2008 (DSCR, 2006).

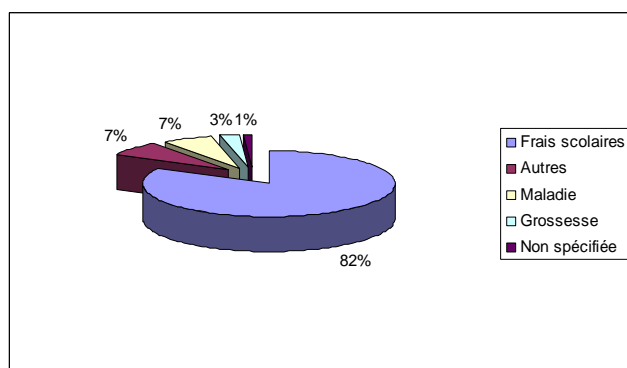


Fig. 2.9.22 Main Reasons of Relative Significance for School Non-attendance in the N'djili Commune

Source: Report of Socio-Economic Survey

3) Examination of Schools

The Study Team has surveyed 72 schools on the sites of the N'djili commune. Most of the schools faced the serious problem of having inadequate toilets. Many schools are outdated or deteriorated, with holes in the roofs. The summary of investigations of schools in the N'djili commune is shown in the following Table. Nearly half of the 72 schools examined have problems with WCs and equipment. The problems with WCs are especially critical in regard to the hygiene condition of students. This is so because when the condition of WC is bad, concern for hygiene degenerates.

Priority should be given to the improvement of WCs in schools. Details are given on the survey sheets in the appendix.

Table 2.9.12 Requirements or Problems in the schools Examined

		Number of Schools	Percentage
Facility to be Repaired	All	0	0.0%
	Partial	38	52.8%
	Done	28	38.9%
WC		33	45.8%
Water Supply		14	19.4%
Power Supply		23	31.9%
Equipments		35	48.6%
Water Tank		11	15.3%
Fence/Gate		22	30.6%
Extension Classroom		22	30.6%
Extension Room		20	27.8%

(2) Existing Issues

1) Dropouts from School

84% of educational problems are a result of economic factors with 54% pertaining to school fees and 32% linked to the poor economic situation. Economic factors are the main reasons for the dropouts witnessed in the commune of N'djili. Parent involvement is not only essential, but some type of informal education system is needed.

2) Sanitary Condition of Schools

Sanitation problems must also be resolved immediately. In the projects conducted by the UNICEF, the UNICEF supports a Hygiene education model at the project schools known as “Healthy school”. It is recommended to improve the sanitary condition together with the education for hygiene.

3) Rehabilitation of Schools

Classrooms need to be rehabilitated while equipment should be supplied. The procurement plan for the minimum required equipment of educational tools such as desks, benches and blackboards, in addition to the improvement of facilities and security systems, including the installation of fences and gates, shall be investigated and improved.

2.9.3.2 Citizenship

(1) Gender

The roles and responsibilities of men and women in the household are slightly different. Men tend to supervise and protect the household. On the other hand, women tend to supervise their children or become housewives. According to a household survey, nearly three-fourths of the head of households are male while one-fourth are women. Many women work as small vendors and

farmers in traditional work, such as “maman manouevre” who are women whose job is to ensure the marketing of food products from rural areas on behalf of the owners of the products for which they receive commission. According to the household survey, 58.2% of women contribute to their household budget.

More than half of them tend to contribute to at least 50% of the household budget. Regarding the significance of female contribution, their participation in communal activities is limited. Only less than 10% of women participate in CCD or CLD activities while only 24.1% participate in NGO activities. The presence of a woman with significant power within the household tends to create family problems culturally since it usually leads to divorce. Female discrimination and minimal attention to women’s rights seems to be prevalent. These tendencies seem to cause the high dropout rate of girls, early pregnancies, and violence against women. The society of the Western Congo was a matrilineal society traditionally. However, women tend to have been marginalised in the process of urbanisation and modernisation, as well as the prolonged conflict-torn situation.

(2) Vulnerable Groups

Children, elders, widows, and disabled persons are defined as vulnerable groups in the N'djili commune. Due to poverty and difficult life circumstances, some people tend to neglect these vulnerable family members. The phenomenon of “sorcier” or witch is a serious social problem which creates more difficulty for this vulnerable group of people. Some parents label their children as sorciers and force him or her out of the household. Sometimes, small churches promote the phenomenon and manipulate the parents. This phenomenon is one of the causes of street children. Similarly, elders and disabled persons who burden their family’s household tend to lose support from the head of household.

Although women are not considered as a vulnerable group, women tend to have risks culturally. The position of women tends to be weaker than men. There is discrimination in connection with employment and having access to education. In addition, empowerment of women is occasionally not welcomed by the traditional thinking of men. The presence of a woman with significant power within the household is sometimes the cause of divorce. The mentality of men regarding women’s rights should be adjusted to become more supportive and accomodative.

(3) Security

The security of the N'djili commune is a serious concern for the population (especially during nighttime). There is high incidence of crimes that include robbery, rape, vandalism and other illegal activities. In August 2008, for instance, there were 75 cases of crimes which included two murder cases according to the statistics of the N'djili commune police. Approximately 80% of the suspects concerned with the above-mentioned crimes were unemployed persons. Therefore, the connection

between the unemployment rate and crime in the commune seem to augur badly for the security of the commune. According to a household survey, the most serious threat for the households was the existence of criminal groups, accounting for 43.5%, followed by street children called “shegues,” which accounts for 22.3% and is regarded as the number one threat for households. Also, in some cases the involvement of police officers in criminal activities was reported. Many of the criminal activities seem to be linked with drug addiction and alcohol, especially within the younger generation. During the CLD planning workshops, the participants were concerned about youth delinquency including night divagation, drug addictions, prostitution and noise during the night as well as crimes caused by shegues. The increased threat of danger during hours of darkness and deteriorated infrastructure such as holes and uncovered drains in the streets are also serious security concerns.

There seems to be two sets of statistics concerning the analysis, the former being from the police and the latter from the Prosecutor’s Office of First Instances in N’djili. The statistics also differ by the category of criminals and victims. Crimes, according to the statistics of the Prosecutor’s Office of First Instances in N’djili (August 2008)

Table 2.9.13 Types of Crimes

Type of Crime	Frequency per month	Types of Criminals
Murders	2	- Driver - Jobless
Robbery	10	- Jobless
Deliberate arson	1	- Unknown
Gangsterism	21	- Men in uniform - Jobless
Robbery	11	- Jobless
Vandalism	11	- Jobless
Prostitution		-
Drug addiction		-
Abortion	2	- Jobless
Wilful assault and battery	17	- Jobless
Total	75	

Source: N'djili commune, study team 2008

With regard to the types of crimes, the Prosecutor’s Office intends to add to the list crimes related to abortion and wilful assault and battery. It should also be mentioned that gangsterism is not considered in the Congolese legislation as an offence; therefore we had to assimilate the offences of extortion, threats, violence and assaults involved into gangsterism. Malicious damage and breaches of domicile are assimilated into vandalism. The sorts of criminals identified by the Prosecutor’s Office as committing criminal actions are mainly jobless people (eight out of ten people) followed

by men in uniform. In other words, the unemployed represent a serious threat to the society. For matters of confidentiality, the Prosecutor's Office did not see it fit to provide information on the sorts of victims involved in the investigations.

(4) Street Children

The investigation of street children has been carried out by The Study Team under the supervision of the communal inspector in charge of development, which, for this case, seconded the communal officer in charge of the community's Development Unit. It is important to note the distinction between children who are abandoned, forsaken or rejected by parents and bewitched and those who are street children. A number of so-called bewitched children are seen in many Revival churches while street children in many instances spend their nights in the open and wander on the streets and roads within the town. As for street children, they exist in many areas of the commune. NGOs and associations are supporting a given number of street children. Some are identified as stated below:

- AMEEMA Q7: Marechal Street No 24 B: 28 children.
- LA SAMARITAINE Q7: Ste Thérèse Parish: 32 children
- MERE ET ENFANTS Q2-Ngandu 1: 18 children
- ALBATROS Q3 (Papa Jean): 25 children

The phenomenon of street children has multiple causes as explained below;

- The successive wars the country experienced have separated children from their respective families;
- Households in poverty;
- Rural migration;
- Polygamy leading to the birth of many children than the progenitor is able to deal with;
- Divorce and remarriage of spouses who have no interest in the children from prior marriages;
- The death of parents due to HIV/AIDS leaving orphans on the streets;
- The stresses brought up by dysfunctional relationships with members of extended families who take in these orphans, causing them to become street children;

The commune does not have an exact specified number of street children living in the commune. The grouping of associations which deals with these street children called "REEJER" also does not have any statistics on this issue. The situation is also an issue for the police. NGOs and associations of street children, namely the members of "REEJER," deal with this category of children as follows: the supervision of street children, reception centers donations received from Christian and Revival churches, men of goodwill, UNICEF, Médecins du Monde and also the contributions of other members. NGOs and associations dealing with street children develop income generating activities to provide for a variety of their needs but in reality, the mostly rely on national and

international institutions to support them in their noble work.

2.9.4 Industry and Employment

N'djili has a wide variety of socio-economic activities both in the formal and informal sectors, although the informal sector is dominant. Strengths are the population's skills, particularly in auto mechanics with N'djili being the center of automobile repairs in Kinshasa and also being referred to as "petit Japon" or small Japan. There are 130 workshops concerning the automobile industry in N'djili. Furthermore, there are 117 workshops in the carpentry field with products such as coffins, which are active and well-known in Kinshasa. In the agricultural sector, on the other hand, a number of farmers including both landowners and peasants work in vegetable farming in the commune especially along the N'djili River plains in Quarters 8 and 9, the SECOMAF farm and the Kimbanseke commune. However, they face transportation and preservation problems with their products.

Apart from the above-mentioned major industries, there are small businesses including work as butchers, bakers, hairdressers, grocers, pharmacies, restaurants, bars, electrical outlets, manual labourers, sculptors, tailors, mechanics, painting businesses, photographers, etc. There are 129 bakery and pastry shops including chikwangue producers and 272 stores in the commune. Also, there are several small fruit and vegetable market places in N'djili and four large markets managed by the commune in Quarters 2, 5, 6, and 7. In the market, women known as 'maman manoeuvre' or small female vendors are quite active. As for the market in Quarter 6, when it rains, it is almost impassable due to mud since there is no roof or concrete-based areas. These markets are connected by poorly constructed roads, mostly lacking asphalt, and thus when it rains the roads are almost impassable. In addition, there are a number of migrant workers from N'djili who are in foreign countries such as Angola, Belgium, France and the United Kingdom making a significant amount of money and remitting it to their families back in the commune.

As for the livelihood structure, the average household monthly income is 91,566 FC with a monthly expense of 103,795 FC on average. However, the average seems to be overstated due to the influence of the rich population. In fact, 19.5% of households have income less than 25,000 FC per month. This means approximately 20% of the population live on less than 1.5 USD a day. On the other hand, 82% of household expenses tend to be used for food on average. In terms of food security, 71.6% of the population are able to have meals twice a day.

The N'djili commune's industry is mainly characterized by agricultural farming activities, automobile mechanics, mechanical engineering and related activities and small businesses (in particular small vendors that exist in the five main marketplaces). These various activities can be

categorized into two sectors; agriculture and business.

(1) Agriculture Sector

The agriculture sector is mainly composed of vegetable farmers working in the N'djili commune and those responsible for cultivation outside of the commune. Considering the Focus Group Workshops carried out in the N'djili commune, several criteria were used in the categorization of vegetable farmers and they include: the areas cultivated, the agricultural tools used, age, gender, health conditions, experience in vegetable farming, level capable of instruction, sources of funding and the type of centers (DMK « Report on Focus Group Workshops, June 2008 »). The examination of the annual report on SENAHUP activities (National Department for Urban Horticulture) shows that vegetable farming activity is operational in 21 out of the 24 communes within the Urban Kinshasa Province: (SENAHUP « Annual Activity Report, 2005 »). In terms of the sites, the same report set up 63 vegetable sites in the city of Kinshasa with a total of 21.781 operating vegetable farmers.

N'djili is located in a semi-urban area with the function of being the center for agriculture, having over 3,000 market gardeners. More than half of them possess farm land consisting of 2,500 km² or more, exclusively or jointly owned. Urban agriculture is extensively practiced along the plains of the N'djili River and other areas of the river including the west area of the community, which is abundant in vegetables and fruits grown both for subsistence in terms of 'vegetable allotments' and for sale.

The farm land is privately owned or rented from private landlords in the major farming areas of CECOMAF, a public farming association located in the neighbouring areas of the Kimbanseke and Kisenga communes. CECOMAF was established in 1974, composed of 32,000 farmers from Kimbanseke, Kisenga and N'djili, functioning in the area of providing micro credit to farmers through the operation of their own funds invested by the 1,451 members. At the initial stage in 1972, their operation had been supported by the French government followed by NGOs for the training of organic farming. Fruits and vegetables collected from the farm are sold within the community and also delivered throughout Kinshasa. The products are reputed as having high quality and are supplied to meet the major needs of Kinshasa, which includes garlic, onions, cabbage, cucumbers, tomatoes, sugar canes, papayas, mangos, bananas, potatoes, peas, manioc, maize, palms, lychee and okra. Among all the fruits and vegetables mentioned above, the main foods consist of manioc and maize. A large area of this diverse agricultural land is composed of small holdings within the Masina commune, which was taken over by the Chinese for a rice growing project a few years ago. The paddy field is irrigated by water pumped up from the N'djili River. Related Chinese agricultural missions provided the farmers with seeds under the National Seed Programme. These farmers were also supplied with fertilizers composted from existing

breweries and garbage services.

There are several small fruit and vegetable market places in N'djili besides the central market in Quarter 6, which, when it rains, is almost impassable due to mud and the lack of a roof or concrete base. Fish to be sold within the market is mostly dried or smoked due to the unavailability of a cold chain; however, some frozen fish is imported from the neighbouring areas and sold within the market. The four major markets are operated by the commune and the tenants are obliged to pay taxes for their daily trades. These markets are connected by poorly constructed roads, mostly without paved asphalt and thus when it rains, they are almost impassable. Communal farmers are composed of producers owning vegetable gardens and vendors who buy vegetables from farmers. Farmers sell their products as wholesalers to vendors who retail vegetables in Gambela, Somba Zigita, Zando of Kinshasa City and other marketplaces.

Among the vegetable farmers, some civil servants were later found having to resign from farming activities due to the loss of jobs. Most of the farmers are women who play a very important role in this sector. Their children are able to easily take over these activities since they are capable of practicing modern farming based on the agricultural programme, farming techniques and watering systems; however, more advanced farming supervision will be required for improvement. Small farming has attracted a number of educated people due to the severity of unemployment, and the need for alternative means of survival.

Table 2.9.14 Vegetable Farming Sites in N'djili

Vegetable Farming Sites	Number of Farmers		Total Number of Vegetable Farmers	Cultivated Areas	
	Men	Women		Average Area per Farmer or Gardner/ha	Total/ha
CECOMAF	178	200	378	0.420	159,00
Quarters 8 & 9	1,180	1,770	2,950	0.025	73,75
Total	1,358	1,970	3,328	0.420	232,75

Source: Report on Focus Group Workshops, DMK, June 2008

Those with the intention to expand their business may hire qualified people in the commune. Considering the Focus Group Workshops carried out in the N'djili commune, several criteria were used in the categorization of vegetable farmer and they include: the areas cultivated, the agricultural tools used, age, gender, health conditions, experience in vegetable farming, level capable of instruction, sources of funding and the type of centers.

At the CECOMAF level, the number of vegetable farmers identified by The Study Team did not exceed 100, whereas there were more than 300 according to SENAHUP statistics. The types of farming activities mainly are related to vegetables such as amaranth, cauliflower and sorrel. The number of employees depends upon the size of the vegetable farming area. As for the number of cultivators, it varies from 1 to 4 cultivators though the majority of vegetable farmers have 1 to 2

cultivators. The salary paid to the cultivators is approximately 15,000 FC per month with some food amounting to 250 FC per working day. CECOMAF Vegetable farmers have monthly incomes which vary enormously during the dry and wet seasons.

During the dry season, vegetables are usually cheaper (from the end of July to September). The vegetable bed costs between 2,000-8,000 FC. The season that is most suitable for vegetable farmers is from November to June. The pricing of vegetable beds such as amaranth and sorrel can vary from 8,000-12,000 FC. During the dry season, vegetable farmers have a monthly income varying from 20,000 FC to 35,000 FC. During the rainy season, the vegetable farming managers' income tends to increase, varying from 50,000 FC to 100,000 FC per month. Monthly vegetable production per cultivator is 20 vegetable beds depending on the vegetable farm/garden. There seems to be no fertilizer providers for the vegetable farmers except for door-to-door salespersons who provide fertilizers to the CECOMAF Farming Site.

The majority of vegetable farmers are responsible for their own funds necessary to run the activities they are involved in. Nevertheless, there is a collective savings pot from the cooperation of vegetable farmers called 'COOPECMAKIN' that is operating within the same building as UCOOPMAKIN. Vegetable farmers feel that the credit services offered through Microfinance are neither trustworthy nor sufficient and do not want to take such a risk in regards to the conditions offered, which are often embellished. Vegetable farming at the N'djili site is mainly achieved in Quarters 8 and 9 since the commune's planning and traditional chiefs contributed this farming area to the government for vegetable farming activities in 1954.

(2)Business Sector

Typical activities of the manufacturing industry in the commune are car repair shops, garages, spare parts shops, car body shops, mechanical tours, car painting shops and paint manufacturing, tire sales, used spare parts, car body fitting, etc. The following table summarizes the inventory of the existing business facilities in the commune.

Table 2.9.15 Inventory of Business Facilities in Production/Services

No.	ITEMS	Nos.	No.	ITEMS	Nos.
A.	WAREHOUSES		D.	SHOPS	
1.	Beer warehouses	56	1.	Lubricants	10
2.	Soft drink warehouses	3	2.	Wholesale shops	1
3.	Cement	40	3.	Pastry/cake-making/pastry making	3
4.	Food stuffs	10	4.	Appliance sales	6
5.	Breads	23	5.	Painting sales	
6.	Pharmaceutical products or medicines	3	6.	Money exchange	2
7.	Agricultural products	5	7.	Photocopiers/locations	15
8.	Sugar	10	8.	Tire sales	7
9.	Palm and vegetable oils	1	9.	Crushed stones/ loose stones/screen	1
10.	Lubricants	1	10.	Brick sales	2
11.	Charcoal	5	11.	Shops	50
B.	HEALTH		12.	Sales of cooling materials	3
1.	Polyclinics	27	13.	Disk shops	5
2.	Pharmacies	140	14.	Perfumery and cosmetics	3
3.	Dispensaries	10	15.	Used spare parts	2
4.	Medical cabinets	3	16.	Bookstores and stationary shops	2
5.	Medical laboratories/Analysis	2	17.	Veterinary products	5
6.	X- Ray centers	1	18.	Cooked meat trading	2
7.	Traditional medicine centers	3	19.	Foods	3
8.	Lawyer's cabinet	4	E.	AUTOMOBILE	
9.	Architecture cabinet	1	1.	Garages	5
C.	WORKSHOPS		2.	Carwashes	4
1.	Mechanical workshops	3	3.	Spare parts shops	10
2.	Battery charge	5	4.	Vehicle parking	5
3.	Car tubing and tire repair/fixing services	5	5.	Hardware store /ironmonger stores	5
4.	Printing	2	F.	HAIR & BEAUTY SALOON	
5.	Domestic or household appliances	5	1.	Hair salons	10
6.	Soap manufactures	1	2.	Laundry services	8
7.	Shops selling cheese and other dairy products	2	3.	Photo Studios	5
8.	Tailoring/Sewing workshops	2	4.	Bureau tics	12
9.	Mechanical tours	3	5.	Cybercafés	8
10.	Funeral services	15	6.	Phone booths	28
11.	Welding or Soldering and Fitting Workshops	1	7.	Village Halls	3
12.	Car trimming, packing	5	8.	Sewing /Tailoring workshops	44
13.	Works of art	2	9.	Sale of sewing materials	5
14.	Leather Trade/Leather crafts	2	10.	Decoration / Embellishment	5
15.	Shoemaking	3	G.	BARS / HOTELS / NIGHT-CLUBS	
16.	Grinding mills	50	1.	Bars	50
17.	Painting manufacturing	2	2.	Hotels	12
18.	Tombstones/Gravestones	2	3.	Night Clubs	1
			4.	Grillrooms/Steakhouses/ Rotisseries	2
			5.	Beer sales	5
			H	Business/Commerce: Vendors in Municipal Marketplaces (Displays/ Stands= Vendors)	
			1	Marketplace Quarter 2 (Mangobo)	200
			2	Marketplace Quarter 5	188
			3	Marketplace Quarter 6 (Likasi)	900
			4	Marketplace Quarter 7	300
			5	Bitabe Marketplace for sawed woods	-
				TOTAL	1,588

Source: N'djili commune, study team 2008

1) Car Repair Workshops

One of the strengths to be featured in the community is the skills of the engineers, particularly found within the auto mechanics areas and auto repair centers since there tend to be many vehicles with car trouble due to the poor road conditions in addition to the inferior quality of the vehicles. During the surveys conducted regarding the car repair workshops in N'djili, it appears that about 43% of the surveyed structures are mechanical workshops, 22% were bodywork fitting workshops and car soldering, 15% consisted of car covering, 9% of electrical repair workshops, 6% of painting workshops and 5% of other workshops.

It is believed that the high number of people from N'djili who have travelled abroad to Europe for automotive training or experience has boosted the mechanical activities and transportation in the N'djili commune. It has developed the inventiveness and ingenuity of N'djili's mechanics to such an extent that commune is often referred to as "Petit Japon." Young people of N'djili are often sent to Europe for training purposes and often return home with various vehicles for their families in lieu of cash remittances, which eventually enables them to develop within the mechanical engineering field. Remittances from Europe and overseas in most cases have enhanced the social standings of N'djili families and thus, has improved the economic level of the commune for the people. However, it is not guaranteed that most of the activities of the communal jobs operated fall into this category. Moreover, there are no persons who have book-keeping records, for instance on car body-work fitting activities on a weekly, monthly or yearly basis.

Table 2.9.16 Average Number of Vehicles Repaired on a Monthly Basis

	Number of Vehicles Repaired on a Monthly Basis										Total	
	Less than 20 vehicles		From 21 - 70 vehicles		From 71 - 120 vehicles		More than 170 vehicles		From 121 - 170 vehicles		Number	%
	Number	%	Number	%	Number	%	Number	%	Number	%		
Quarter 1	7	53.8%	2	15.4%	4	30.8%					13	100.0%
Quarter 2			3	60.0%	2	40.0%					5	100.0%
Quarter 3	5	83.3%	1	16.7%							6	100.0%
Quarter 4	11	35.5%	8	25.8%	4	12.9%	8	25.8%			31	100.0%
Quarter 5	13	81.3%	1	6.3%	2	12.5%					16	100.0%
Quarter 6			1	25.0%	2	50.0%	1	25.0%			4	100.0%
Quarter 7	11	52.4%	5	23.8%	3	14.3%	2	9.5%			21	100.0%
Quarter 8	2	66.7%	1	33.3%							3	100.0%
Quarter 9	2	66.7%	1	33.3%							3	100.0%
Quarter 10	2	100.0%									2	100.0%
Quarter 11	3	75.0%							1	25.0%	4	100.0%
Quarter 12	6	85.7%	1	14.3%							7	100.0%
Quarter 13	11	73.3%	3	20.0%	1	6.7%					15	100.0%
Total	73	56.2%	27	20.8%	18	13.8%	11	8.5%	1	.8%	130	100.0%

Source: N'djili commune, study team 2008

The table shows that 56% of the interviewed owners declared having repaired less than 20 vehicles on a monthly basis, 21% repaired 21-70 vehicles, 14% repaired from 71-120 vehicles, 8% repaired more than 170 vehicles while 1% repaired 121-170 vehicles. It should be noted that, in general, car repair workshops in the N'djili commune repair 52 vehicles on average per month.

Concerning car repair workshops in the N'djili commune, it appears from our surveys that 83% of the people interviewed believe that there are no official car repair workshops in the commune, opposed to the 17% who believe otherwise. As for the acquisition of knowledge in their professions, 89% of the people interviewed either received some vocational training, workshop or garage training or received specialized studies within their field.

Nevertheless, 11% of the people interviewed were either trained by someone or self-trained, or initiated by their own family. As for the customers, 46% of the interviewed persons affirmed to the quality of their services, 46% by means of their customer relationships, (i.e. customer loyalty) and 8% were walk-in customers acquired by either information circulation or word of mouth. As regards the spare parts supplies, 79% of the interviewed persons received them either from Victory Square or within the town's center, or even from the central marketplace and various marketplaces

of Kinshasa's capital city, while 21% buy them either in the N'djili commune, or import from Europe. As regards funding, 78% of interviewed persons fund their activities by themselves, 15% are funded by the customers through their cost estimations and 7% receive financial assistance from family members. Concerning the number of employees, the survey shows that 42% of workshops have less than 3 employees, 37% from 4 to 6 employees, 11% with more than 13 employees, 7% with 7 to 9 employees, and finally 3% with 10 to 12 employees. Thus, the average number of employees is 6 persons per car repair workshop.

2)Factories and Artisans

The factories in the modern sense with Western concepts do not yet exist within the N'djili commune. Nevertheless, during supplementary surveys on the community profile, structures that manufacture products and/or transform raw materials and semi-finished products into finished products were identified. In this context, many commercial workshops were assimilated into factories, especially as shown below:

- Tailoring workshops in 17.7% of the cases;
- Metallic door and window factories in 11.3% of the cases;
- Brazier factories in 8.6% of the cases;
- Shoe-making factories in 8.1% of the cases;
- Refrigeration factories in 7.0% of the cases;
- Battery Hot plate factories in 7.0% of the cases;
- Old iron products in 7.0% of the cases;
- Watering can factories, buckets and wheelbarrows in 7.0% of the cases;
- Factories for agricultural food stuff transformation in 5.5% of the cases;
- Factories for electronic assembling in 4.8% of the cases;
- Milly-mill in 2.7% of the cases;
- Factories for metallic beds in 2.7% of the cases;
- Factories for making rice and groundnuts hulling/husking machines in 2.7% of the cases;
- Factories for making metallic plates and pots in 2.2% of cases.

A total of 186 factories accepted to answer the survey questions requested. Concerning the number of employees, our survey shows that 66% of artisan workshops have 1 to 3 employees, 28% from 4 to 6 employees and 6% with more than 7 employees. Thus, the average number of employees is about 3 persons per workshop of artisanal products.

3)Agricultural Food Products

The Study Team has registered 129 economic entities in grouped sectors as part of bakery and pastry activities. This sector produces food stuffs such as:

- Chikwangué for 58.9%;
- Gaufers and doughnuts/cakes for 20%;
- Bakery and pastry products (bread, cakes, waffles, etc.) for 12.4%;
- Popcorn Maize for 6.2%;
- Ice-cream for 2.3%.

The number of employees in this industry varies from a minimum of one employee to 27 employees. Details on the number of employees are shown in the table below.

4) Wood Products

Concerning wood products, wood workshops combine several specialties/competences. It was observed that 57% of workshops in the wood sector make chairs, such as living room chairs. Twenty-eight of these workshops mainly produce beds, 26 workshops are specialized in making doors and windows for houses, 19 workshops use wood for making coffins, and 6 of these workshops stated that they created a variety of wood products. Workshops making wood products employ an average of 3 people. The highest rate of employees observed so far is 27% of workers.

5) Stores

In the stores, there are organizations having sales areas within buildings and houses. The team noted many types of stores including: drug stores, small shops, drink stores, food stores (including frozen food stores), locksmiths, clothing stores, hardware stores, telecommunication stores, cosmetics, office automation, wheels, lubricants, cattle and poultry feedstuffs, electronics, sewing, drying cleaning and photo studios. Thus, in total, 273 stores represent all the above-mentioned structures which have been surveyed. The following graph demonstrates the various kinds of shops operated in the commune. The stores which have been analyzed had an average of one employee; those which had more than one employee did not exceed more than five employees per store. In general, 62.3% of stores employed one person, 21.6% resorted to the services of two employees, 8.1% to three employees, 3.3% had four employees and only 4.8% of these stores had five employees.

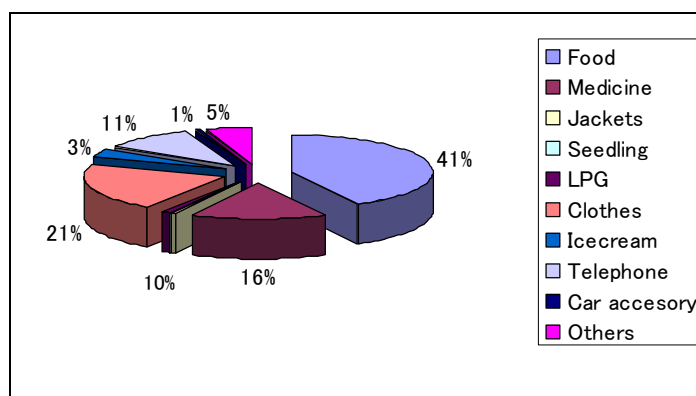


Fig. 2.9.23 Category of Shops within N'djili

Source: Focus Group Discussion 2008

6) Small Scale Businesses Including Street Vendors

N'djili is an autonomous community, with many people working in the commune's small businesses including work as butchers, bakers, hairdressers, grocers, pharmacies, restaurants, bars, electrical outlets, manual labourers, sculptors, tailors, mechanics, painting businesses, photographers etc. There is no large scale industry in the N'djili commune; however, their business activities are quite vigorous. There are marketplace vendors, small shopkeepers, warehouses, numerous bars, ordinary restaurants and small hotels. Sewing activities are also very popular, more for women's clothing rather than for men due to the tendency of men settling for second-hand clothing. People who are engaged in such businesses have their own shops, roofed rooms and sell manufactured products.

Most of these activities are informal. Only a few people have the required documents needed to operate a business, and even fewer have book-keeping records. Consequently, the banking system or the formal sector is still very weak. Religious or spiritual activities are also worth mentioning as they are actually sharing higher proportions of daily life activities since there are at least two to three churches accessible even on small streets. Moreover, the government and various churches also provide public and private school services. These churches engage in services for the benefit of the local people, especially services for women which are available throughout the day. The majority of small sellers in the commune of N'djili declare that there are no cooperatives in their industry's branch. Only 5.8% of investigated sellers asserted the existence of a cooperative with small sellers. Based on the results of a survey, most of the small sellers employed an average of one employee, with the highest number of employees being seven.

Table 2.9.16 shows the major issues which have risen during the workshop surveying period concerning the agricultural and commercial sectors of the N'djili commune.

Table 2.9.17 Major Issues in the Agricultural and Commercial Sectors of N'djili

Focus Group	Agricultural	Commercial
Profile of Participants	<p><u>Agricultural Area size:</u> 2500m²< (60%), 1250-2500 m² (20%), 1250m²> (20%)</p> <p><u>Agricultural Equipment:</u> Equipped (0%), Semi equipped (80%), Limited equipped (20%)</p> <p><u>Age:</u> 45-60 (60%), 60< (20%), 45> (20%)</p> <p><u>Gender:</u> Female (60%), Male (40%)</p> <p><u>Land Tenure:</u> Joint owner (50%), Owner (30%), Peasant (20%)</p> <p><u>Type of Vegetable:</u> Local (60%), Exotic & Local (30%), Exotic (10%)</p>	<p><u>Goods:</u> Food (40%), Drink (20%), Pharmacy (15%), Communication (10%), Others (15%)</p> <p><u>Type:</u> Retailer (70%), Half wholesaler (20%), Others (10%)</p> <p><u>Education:</u> Secondary (60%), Primary (30%), None (5%), Tertiary (5%)</p>
Issues	<p>Bad conditions of agricultural roads</p> <p>Lack of suitable market place</p> <p>Harassment by landowners</p> <p>Lack of transportation for agricultural products</p> <p>Anarchistic development of surroundings of gardens</p> <p>Lack of manures and high prices</p> <p>Lack of agricultural credit</p>	<p>Harassment and multiplicity of taxes</p> <p>Unfair competition of the local wholesalers</p> <p>Distance to markets</p> <p>Bad condition of roads</p> <p>Electricity Blackouts</p> <p>Monetary instability</p> <p>Crimes</p>

Source: Kinshasa Development Plan 2007-2011

2.9.5 Water and Lifeline

According to a household survey, 97% of households have access to tap water from REGIDESO in their household compound or through their neighbours' compound. However, most of them are unsatisfied with the water quality due to the poor conditions of the piping system and unstable water supply. There are problems of insufficient water supply in Quarters 5, 6, and 13. Also, the residents tend to complain about the lump-sum invoicing of water consumption by REGIDESO. The expenditure for water is 4,635 FC on average. This amount accounts for approximately 5% of the average household income per month. However, both well water and water from the N'djili and Nsanga Rivers are believed to be unsuitable for drinking, according to the surrounding population.

Concerning energy resources, 80% of households have connection to electricity by SNEL. However, the connection is irregular and unstable. The residents tend to complain about the lump-sum invoicing of electricity by SNEL. The expenditure for electricity is 3,097 FC on average. This amount accounts for approximately 3% of the average household income per month. Therefore, 95% of households use charcoal or firewood as alternative sources of energy as well as power generators. The use of charcoal and firewood causes air pollution and deforestation. Also, insufficient electricity supply tends to lead to the usage of candles and storm lanterns for home lighting during the night. The usage of candles and storm lanterns emit smoke inside houses, causing fires and respiratory and ophthalmic diseases.

In the entire area of the N'djili commune, the water distribution network is installed, for the most part, which provides the entire area with service to water. Although the ratio of households with a yard connection is approximately 86% of all households, those with inadequate service or with a lack of water account for 36% of all of connected households (refer to Table 2.9.18 and Fig. 2.9.27). The households without a connection tend to purchase tap water (supplied water) from the neighbouring water faucet, and it is presumed that all households are mostly using tap water. Although some households use well water as domestic water, tap water is preferred for drinking. In addition, non-connected households, were those that could not be connected for economical reasons or because of unpaid bills.

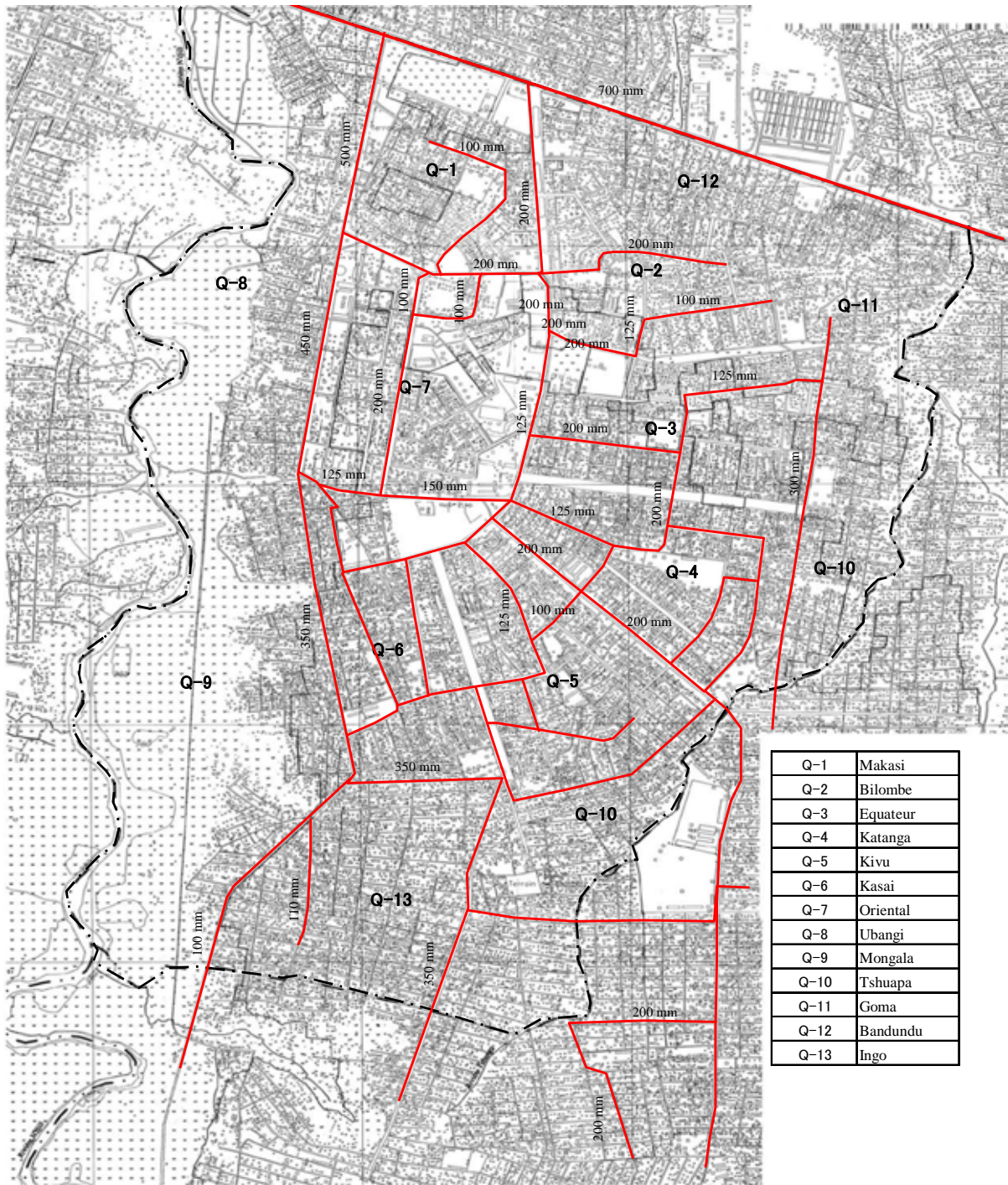


Fig. 2.9.24 Main Distribution Network in the N'djili Commune

Table 2.9.18 Existing Situation of the Water Supply

Quartioers		Situation of Water Supplu Service						Non-connection of water supply service		Total	
		Satisfactory service		Inadequate service		Lack of water					Sub-total
Q- 1	Makasi	726	96%	16	2%	0	0%	742	18	2%	760
Q- 2	Bilombe	1,113	94%	21	2%	0	0%	1,134	44	4%	1,178
Q- 3	Equateur	775	68%	28	2%	186	16%	989	159	14%	1,148
Q- 4	Katanga	940	78%	28	2%	220	18%	1,188	14	1%	1,202
Q- 5	Kivu	189	14%	10	1%	777	59%	976	336	26%	1,312
Q- 6	Kasai	280	23%	301	25%	473	39%	1,054	165	14%	1,219
Q- 7	Oriental	696	96%	0	0%	32	4%	728	0	0%	728
Q- 8	Ubangi	1,121	74%	31	2%	0	0%	1,152	354	24%	1,506
Q- 9	Mongala	597	40%	208	14%	217	15%	1,022	459	31%	1,481
Q-10	Tshuapa	512	60%	3	0%	208	24%	723	136	16%	859
Q-11	Goma	917	79%	4	0%	169	15%	1,090	70	6%	1,160
Q-12	Bandundu	1,111	84%	0	0%	0	0%	1,111	219	16%	1,330
Q-13	Ingo	186	7%	728	26%	1,566	55%	2,480	365	13%	2,845
Total		9,163	55%	1,378	8%	3,848	23%	14,389	2,339	14%	16,728
		63.7%	-	9.6%	-	26.7%	-	100%			

The distribution network of the N'djili commune was built in the 1950s. 75% of the pipelines in the distribution network which were built in the 1950s are still used now (refer to Fig.2.9.27). Steel pipes are used for the distribution network and it is thought that the corrosion of the distribution pipe is advancing. It is believed that the advancement of corrosion, especially within the small diameter-sized pipe, will deteriorate the water supply capability enormously and make sufficient water supply services difficult.

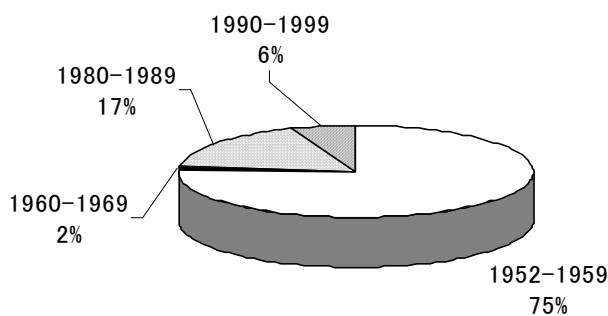


Fig. 2.9.25 Ratio of Pipe Length According to Construction Year

Many water taps at the end of the distribution network can be seen to have inadequate water supply. This is also observed in zones near water treatment plants and households with inadequate water services. It is presumed that the corrosion of the small diameter-sized pipe in all distribution networks is to blame for this. In addition to the obstacle of pipe corrosion, many water tap breakages (water taps with the inclusion of water meters) can be seen. It is thought that the repair of water taps by households is quite difficult. Based on the field investigation and the data collected, it has been judged that the improvement of the water supply services is an urgent matter.

CHAPTER 3

BASIC POLICY FOR THE REHABILITATION OF N'DJILI COMMUNE

CHAPTER 3: BASIC POLICY FOR THE REHABILITATION OF N'DJILI COMMUNE

3.1 CHARACTERISTICS OF N'DJILI COMMUNE

3.1.1 Comparison with Kinshasa Province

Comparison of major statistics of N'djili commune with Kinshasa Province is shown in the following table.

Table 3.1.1 Comparison of Major Statistics of N'djili with Kinshasa

	Kinshasa	N'djili	Remarks
Population	6,387,725	320,762	2007, INS
Population increase rate per year	2.17%* ¹	1.08%* ²	* ¹ 1995-2007, INS * ² 2001-2005,N'djili Commune
Population Density persons/km ²	719	34,020* ²	* ² 7 th highest among 24 communes
Population ratio under 20 years old	51.3%* ³	51.9%* ⁴	* ³ 2004, INS * ⁴ 2007,N'djili commune
Infant mortality in delivery	13.7%* ⁵	1.5%* ⁶	* ⁵ City health program 2008-2012 * ⁶ N'djili commune
Water served population with house connection	41%	55%	2005, REGIDESO
Population without accessible water service	25%	18%	2005,REGIDESO
School attendance rate (primary secondary)	57.8%(Primary)* ⁷ 37.4%(Secondary)* ⁷	83.4%* ⁸	* ⁷ 2007, Ministry of EPSP * ⁸ Household survey
Number of primary schools	2,089* ⁹	116* ¹⁰	* ⁹ 2007, Ministry of EPSP * ¹⁰ 2008,N'djili commune
Number of elementary Schools per 10,000 population	3.27	3.62	
Number of secondary schools	1,219* ⁹	83* ¹⁰	
Number of secondary schools per 10,000 population	1.91	2.59	

The following features can be grasped based on the above comparison.

- N'djili commune is one of the communes where the city area is already overpopulated

and urbanized in Kinshasa.

- The levels of civil services such as water supply, education and health are higher than average in Kinshasa.
- Education level in N'djili is rather high and people have proper understanding on significance of education.
- The level of health care especially in infant and maternal issues in N'djili is better than average in Kinshasa.
- As mentioned above, N'djili commune is in a living standard higher than an average in Kinshasa, and it can be said that it is possible to improve to the excellent town by enlarging potentials and minimizing problems. Existence of labour force.

3.1.2 Potential of N'djili Commune

There are various kinds of problems in N'djili commune. During the workshops in 13 quarters, on the other hand, potentials for community-led development were identified. The workshops were facilitated by JICA Study Team with Multina DMK using the Sustainable Livelihoods (SL) method which is an analytical tool to understand livelihoods of the community. The results are summarised in five livelihood assets including human, social, physical, natural and financial capitals as the bellow.

(1) Human Capital

Human capital refers to skills, capacities, knowledge, beliefs, attitude for work (availability, labor structure) and good health which enable people to pursue various strategies of existence.

- Existence of young people
- Existence of labour force
- Existence of skilled persons
- Existence of migrant workers in foreign countries
- Existence of demographic statistics

The commune has good potentials of human resource including young human power and skilled persons. Those human resources can be a driving force of development of the commune.

(2) Social Capital

Social capital refers to mutual trust and reciprocity relationships which support the cooperative action, such as membership of formal and informal groups and networks which increase people's capacity to work together and enable them to have access to institutions and services.

- Existence of associations and clubs
- Presence of the authorities such as parliament member and vice governor of Kinshasa province (a political capital)

- Household solidarity
- Presence of churches
- Presence of NGOs
- Amicable settlement of conflict

Although the relationship among neighbors is not strong generally, there are some civil societies such as associations, churches and NGOs. Also, local development mechanism have gradually revitalized through the process of JICA study especially in the CLD planning workshops and the Civic Education Test Project. Those social capitals should be utilized for implementation of the Action Plan for further enhancement of the capital in the commune.

(3) Physical Capital

Physical capital includes basic infrastructures and services that help to support livelihood, such as accessible transportation, water supply, safe houses and buildings, sanitation systems, clean energy, access to information and other services.

- Existence of education facilities
- Existing of health facilities including Congolese and Chinese Friendship Hospital
- Existence of markets
- Existence of Quartier administration offices
- Existence of football fields
- Existence of water supply network (RESIDESO)
- Connection to city power (SNEL)
- Existence of vocational training schools
- Existence of streets and roads
- Existence of transportation such as bus and taxi

There are existing infrastructures/facilities in every sector, although those infrastructures/facilities have various kinds of problems. In short-term, it is effective and appropriate to utilise the existing infrastructure efficiently.

(4) Natural Capital

Natural capital includes reserves of natural resources which provide the goods and seeds that are useful for life such as forest (access mode, forest rights), water (availability, quality), soil (quality and quantity of land), and fish and mineral resources.

- Existence of rivers (N'sanga and N'djili river)
- Sufficient rainfall during year
- Availability of underground water resource (not so deep)
- Existence of wells

- Land with fertility for agriculture
- Plenty of sunshine for solar energy
- Plenty of sand

The natural environment of N'djili seems not to be a barren land but may be rich for agriculture and daily life. Plenty of water and sunshine can be utilised.

(5) Financial Capital

Financial capital indicates the financial resources which a poor population can have in terms of availability of money or its equivalents, including reserves (i.e. savings, credit) and regular flow of money (e.g. remunerated work, remittance of funds, subsidies, transfers from relatives and other social rights).

- Money transfer from migrant workers from N'djili
- Existence of microfinance institutions such as FINCA and PROCREDIT
- Existence of commercial banks and money exchangers
- Existence of asset holder in the commune

There are financial resources in N'djili both from industries in the commune and remittance from foreign countries. It is necessary to utilise those financial resources or stocks efficiently for commercial development purpose rather than individual consumptions for luxurious goods.

(6) Identified Potential in N'djili Commune

As described above, outlines of potentials and possibilities which are pointed out by the participants in the Quartier workshop are as follows.

- Human capital: Existence of competent and young human resources
- Social capital: Presence of NGOs and churches, existence of amicable citizens
- Physical capital: Existence of basic social infrastructure
- Natural capital: Blessed natural condition with river, rainfall and sunshine
- Financial capital: Money transfer from abroad and existence of micro credit

3.1.3 SWOT Analysis

SWOT analysis is a basic, straightforward model that provides direction and serves as a basis for the development of marketing plans. It accomplishes this by assessing an organization's strengths (what an organization is able to do) and weaknesses (what an organization is unable to do) in addition to opportunities (potential favourable conditions for an organization) and threats (potential unfavourable conditions for an organization). SWOT analysis is an important step in planning and its value is often underestimated despite the simplicity in creation. The role of SWOT analysis is to take information from environmental analysis and separate it into internal

issues (strengths and weaknesses) and external issues (opportunities and threats). Once this is completed, SWOT analysis determines if the information indicates something that will assist the organization in accomplishing its objectives (a strength or opportunity), or if it indicates an obstacle that must be overcome or minimized to achieve desired results (a weakness or threat).

Based on the social survey results conducted by The Study Team in addition to the existing analysis of the socio-economic conditions, SWOT Analysis for the N'djili commune is summarized in the following table.

Table 3.1.2 SWOT Matrix for N'djili's Socio-Economic Conditions

Capital	Strengths	Weaknesses	Opportunities	Threats
Human	<ul style="list-style-type: none"> ● Existence of demographic statistics 	<ul style="list-style-type: none"> ● Unemployment especially for young people ● Many young people migrate to Europe ● Illiteracy of population ● Insufficient number of schools ● Large incidence of pregnancy in young girls ● Many people are suffering from malaria and other infectious diseases ● Insufficient number and quality of health facilities ● Selfishness 	<ul style="list-style-type: none"> ● Existence of young people ● Existence of labour force ● Existence of skilled persons ● Existence of migrant workers in foreign countries 	<ul style="list-style-type: none"> ● Lack of opportunity of vocational training ● Difficulty of low school attendance due to additional school fees and corruption ● Lack of family planning and undesirable births ● Refusal of children vaccinations by parents ● Lack of population awareness about health education
Social	<ul style="list-style-type: none"> ● Amicable settlement of conflicts ● Presence of the authorities such as parliament members and the vice governor of the Kinshasa province ● Household solidarity 	<ul style="list-style-type: none"> ● Insufficient functions of street associations and clubs for community facilitation 	<ul style="list-style-type: none"> ● Existence of associations and clubs ● Presence of churches ● Presence of NGOs 	<ul style="list-style-type: none"> ● Lack of trust and solidarity of community ● Weak community participation ● Children's night divagation ● Presence of street children (shegues) and criminal activities ● Drug addictions ● Prostitution by street girls ● Sorcery (witchcraft) phenomenon for children and elders ● Generation gap and disorder in households ● Noise during the day and night by young people, pubs and churches ● Land conflicts ● Behaviour of NGOs acting as private companies ● Intervention of family issues by local churches
Physical	<ul style="list-style-type: none"> ● Existence of Quartier administration offices 	<ul style="list-style-type: none"> ● Bad road conditions ● Poor school buildings 	<ul style="list-style-type: none"> ● Connection to city power ● Existence of vocational 	<ul style="list-style-type: none"> ● Lack of sport and cultural facilities including libraries

THE DEVELOPMENT STUDY FOR URBAN REHABILITATION PLAN OF KINSHASA
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FINAL REPORT VOLUME II ACTION PLAN, MARCH 2010
CHAPTER 3 BASIC POLICY FOR REHABILITATION OF THE N'DJILI COMMUNE

	<ul style="list-style-type: none"> ● Existence of football fields 	<ul style="list-style-type: none"> ● Lack of public dustbins ● Gutters filled with excess garbage ● Aged housing ● Lack of food reserve facilities 	<ul style="list-style-type: none"> ● training schools ● Existence of streets and roads ● Existence of school infrastructures ● Existing of health facilities including a Chinese hospital ● Existence of markets ● Existence of water supply networks ● Existence of transportation 	<ul style="list-style-type: none"> ● Insufficient conditions or lack of Quartier administration offices ● Water and electricity supply infrastructure are outdated ● Lack of public lighting ● Bad road conditions ● Poor school buildings ● Aged housing ● No public transportation system in the commune ● Bad conditions of markets including public toilets ● Lump-sum billing for electricity and water ● Vandalism of communal properties
Natural	<ul style="list-style-type: none"> ● Availability of underground water resources (not so deep) ● Existence of wells 	<ul style="list-style-type: none"> ● Pollution by power generators and use of plastics as fuel ● Lack of a dumping site for household garbage ● Bad quality of drinking water ● Lack of clean environment and excess garbage ● High prices of firewood and charcoal ● Usage of candles and storm lanterns which cause fires 	<ul style="list-style-type: none"> ● Existence of rivers (N'sanga and the N'djili River) ● Abundant amount of sunshine for solar energy ● Abundant amounts of sand ● Sufficient rainfall throughout the year ● Land with fertility for agriculture 	<ul style="list-style-type: none"> ● Erosion ● Floods after rain ● Deforestation, including within the reserve sites ● Usage of plastic bags ● Contaminated water of the N'djili River ● Soil contamination of agricultural gardens due to garbage dumping, (including plastic bags)
Financial	<ul style="list-style-type: none"> ● Existence of persons with abundant resources in the commune ● Money transfers from migrant workers from N'djili 	<ul style="list-style-type: none"> ● Low salary/wages ● Financial dependency of households with family migrants in foreign countries ● High housing rent 	<ul style="list-style-type: none"> ● Existence of micro financing institutions such as FINCA and PROCREDIT ● Existence of commercial banks and money exchangers 	<ul style="list-style-type: none"> ● Monetary instability ● Price instability ● High interest rates for credits from money lenders or banks ● High interest rates and short reimbursement period of micro financing including FINCA ● Lack of saving practices

3.2 RELEVANT POLICIES FOR COMMUNITY DEVELOPMENT

Through the analysis of captioned plans and programmes referenced above, the fundamental direction of development planning is specified as follows.

Table 3.2.1 Major Policies from Relevant Plans and Programmes

Urban Infrastructure (Roads)	<ul style="list-style-type: none"> • Rehabilitation and construction of intercommoned roads and inter quarter roads • Make use of public buses to reduce the traffic jam
Health & Sanitation	<ul style="list-style-type: none"> • The development of Health Zones is the main line of the strategy to reinforce the Health System. • It aims at improving the functionality level of hospitals and health centres in order to provide quality health cares to the population. • Promoting community partnership in the implementation of health policy. • Evacuation of rubbish and other waste • Reactivate and reinforce Communal Improvement/ Cleaning up Brigades • Organizing Sanitary and Methodological Education Campaign
Education & Citizenship	<ul style="list-style-type: none"> • Increasing school attendance from 64.1% in 2006 to 80% in 2008, and 100% from now to 2015. • Annual rehabilitation of 10% of classrooms and equipping them with school furniture. • Train drop-out young children and send them to vocational training centers
Water & Energy	<ul style="list-style-type: none"> • Rehabilitation of existing infrastructures, thus facilitating access to a greater number, • To identify water needs and inventory

3.3 OPINIONS FROM THE COMMUNITY

The JICA study team held the seminar on the results of community profiling surveys to share identified data and needs with the stakeholders in 3 September 2008. Based on the presented information, the participants discussed about necessary development actions for N'djili commune as the table below illustrates. Concerning residents opinions came out from the Civic Education Project, a Pilot Projects of the Study, are refer to the Chapter 4 "PILOT PROJECT" in the Main Text Report.

Table 3.3.1 Result of Discussion on Necessary Development Actions for N'djili

Priorities of Provincial Gov.	Actions
Rehabilitation of local roads and improvement of connecting roads	Rehabilitation of road infrastructure to improve intra-traffic Improvement of public transportation including construction of bus station

Health and Hygiene	Improvement of access to health services Improvement of conditions of waste disposal and environment Construction of public toilet
Maintaining education sector, training and protection of civilians	Rehabilitation of education infrastructure Promotion of attractive and accessible education Establishment of library for youth Establishment of youth club facility Fight against juvenile delinquency Youth partnership between N'djili and a city in Japan Rehabilitation of public lights for security
Creation of employment, retrieval of profession and fight against poverty	Enhancing entrepreneurship through establishment of microfinance institutions and business training centre Promotion of agriculture Establishment of vocational training centre
Access to water and electric power	Rehabilitation of RESIDESO water supply network and SNEL electricity network*
Crosscutting Issues	Set up a community radio to change mentality of the population More female participation in community activities Awareness raising of the population on community development issues Promotion of "Kaizen" mind**

* The issues of water and electricity had not been discussed deeply because scale of the issues was not suitable for commune level development action.

** "Kaizen" is a Japanese word which means continuous quality improvement. It is a key for success of development of the post-war Japan.

3.4 DEVELOPMENT VISION AND BASIC CONCEPTS

3.4.1 Development Vision for the Year 2018

Considering upon potentials and predominance in the commune, basic concept for the urban rehabilitation plan which harnesses the potentials of the commune and enhances the people's self-reliance shall be established as follows.

Actions from N'djili

- *Model commune for the development and reconstruction of Kinshasa*
- *Commune of actions on people's own initiatives*

3.4.2 Basic Concept

As the urban rehabilitation plan is correspondent with the relevant plans of the government, the basic concept of the urban rehabilitation plan is in line with the five pillars in the Provincial Government Program 2007-2011, KINSHASA City. Basic concepts categorized in the five pillars of the program are as follows.

- Beautiful Urban Space (Urban Infrastructure)
- Healthy Town (Health and Sanitation)

- Citizenship (Education and Citizenship)
- Made in N'djili (Industry and Employment)
- Access to Lifeline (Water and Energy)

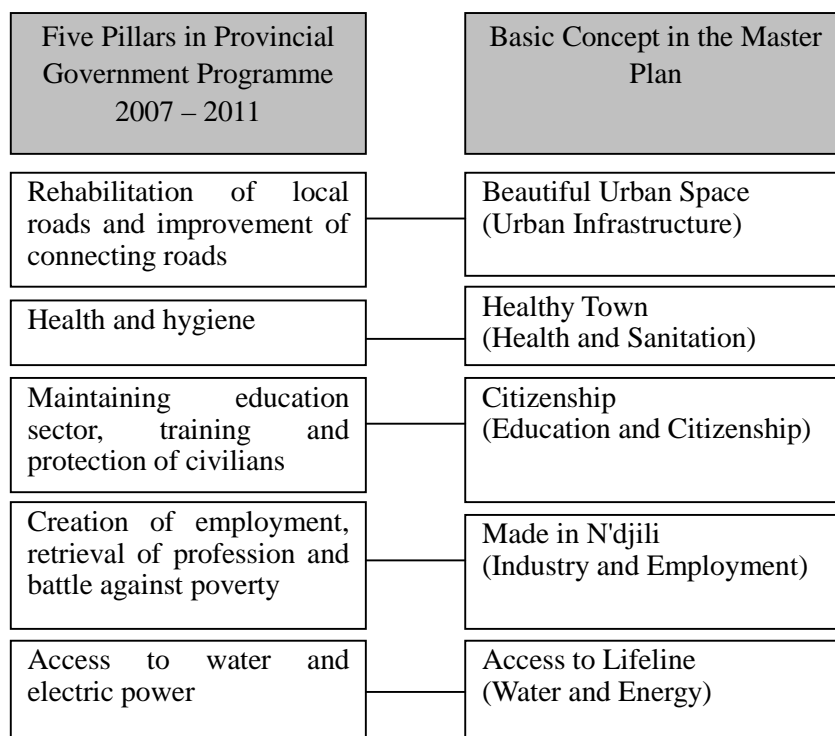


Fig.3.4.1 Relationship of Basic Concepts and Five Pillars of Kinshasa Province

Based on the Fig.3.4.1, Action Plan for Community Vitalization of each basic concept is described in following Chapter 4.

3.4.3 Development Strategy

(1) Target for the Short and Mid Term (2009-2013)

- 1) Fundamental conditions for the overall rehabilitation and development of the commune shall be prepared.
- 2) Towards the rehabilitation and development of the commune, structures of commune people's activity shall be established and reinforced.
- 3) By the recovery of fundamental functions through the rehabilitation of infrastructures in the commune, conditions in which people can enjoy the basic civic services shall be prepared.
- 4) The methodology of rehabilitation and development of N'djili commune shall be extended into Kinshasa city and shall be fixed as the model procedure.

(2) Development Phase; Mid Term (2014-2018)

- 1) The outstanding town with people's high vitality shall be created and then become the model town in Kinshasa city.
- 2) Positive activities by the commune people shall be deployed in various fields and those activities enable the continuous development.
- 3) In order to make N'djili a commune which has the most superior living environment and living standard, functions and service levels of infrastructures shall be improved.

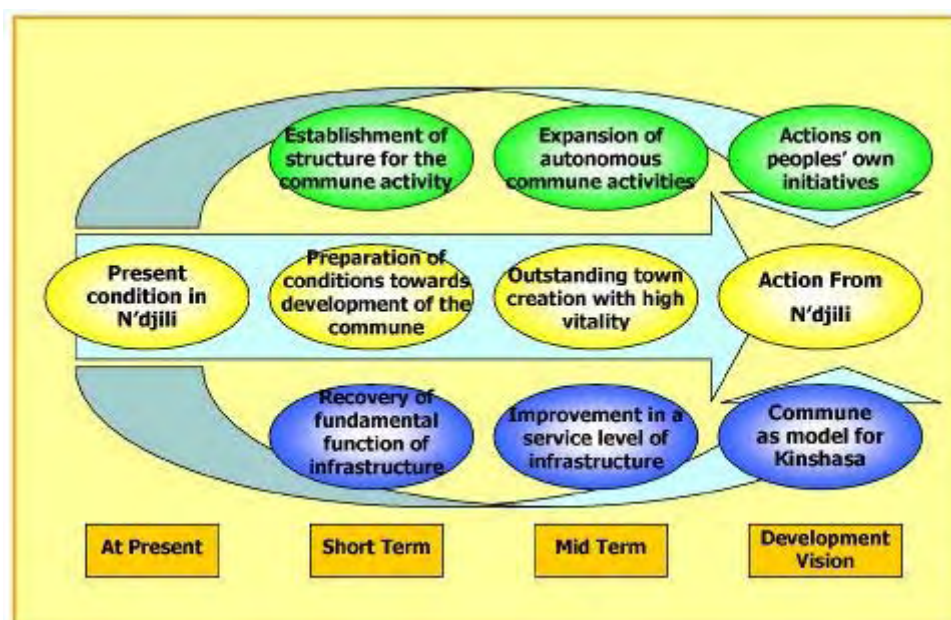


Fig. 3.4.2 Approach for the Development of N'djili Commune

3.4.4 Policy to Achieve the Target

(1) Short Term (2009-2013)

- 1) The organization and system for commune people to participate in administration of communes shall be established.
- 2) Aiming at establishment of organization and system, the model projects through participation of commune people are undertaken.
- 3) Project through participation of commune people shall be deployed and extended taking advantage of the results achieved by the model project.
- 4) Rehabilitation of basic commune infrastructures in each quartier shall be carried out.
- 5) The participation of commune people in the management and practice of maintenance shall be examined, and if possible, shall be carried out by commune.
- 6) Methodology of rehabilitation in N'djili shall be standardized and deployed to other communes with the assistance of the provincial government.

(2) Mid Term (2014-2018)

- 1) The planning and implementations of improvement of living conditions and living environments shall be promoted by people's autonomous initiatives.
- 2) Project through participation of commune people shall be deployed extensively and continuously.
- 3) Improvement of infrastructures shall be accelerated to enhance the service level and functions.
- 4) Management and control of maintenance of infrastructure are carried out by autonomous activity.
- 5) Issues for the long term development of the commune shall be tackled for further revitalisation of the commune.

CHAPTER 4

ACTION PLAN FOR COMMUNITY VITALIZATION

CHAPTER 4: ACTION PLAN FOR COMMUNITY VITALIZATION

4.1 INSTITUTIONAL ARRANGEMENT FOR ACTION

N'djili Action Plan is the urban rehabilitation plan for the commune. The Action Plan includes development concepts, strategies and priority actions for community vitalisation. The process of preparation of the Action Plan required actual participation and commitment of stakeholders, especially for responsible official persons from the provincial Ministry of Plan, Budget, Public Works and Infrastructure N'djili commune office and representatives of Committee for Local Development (CLDs). Finally, the Action Plan was prepared by the efforts of those stakeholders as well as the support from the JICA study team. However, it is difficult for the implementation of Action Plan without strong commitment of stakeholders. Therefore, it is necessary to establish a local development mechanism. In this section, necessary institutional arrangement for the above requirement is summarised.

4.1.1 Local Development Mechanism

N'djili commune has experience of community-led development. In the process of preparation of DSRP, N'djili Community Development Plan (2007-2011) was prepared by commune officers and quarter leaders using the participatory approach. BTC has also supported the establishment of Committee of Commune Development (CCD) and Committee of Local Development (CLD) in each Quarter as grassroots bodies for development in N'djili under PAIDECO. Under the process of JICA study, re-elected CLD members were strengthened their capacity on community-led development through the participation to stakeholder meetings and implementation of test projects. Approximately 80% of residents did not recognise CLDs at the time of household survey. At the end of the JICA study, however, more than one thirds of population recognise the CLDs as a potential actor for community development in N'djili.

A local development mechanism should have a significant initiative for commune development. Local government, especially for the commune authority should take a leadership for local level community development. They have responsibilities for drawing development pictures and administrative arrangements. Also, international donors can support to those local efforts. Both government and donors, however, have limited financial capacity to solve various kinds of issues in commune level. Local level or grassroots development mechanism and initiatives are significantly important to tackle various miscellaneous issues in the community. In this regard, the government and grassroots institutions should collaborate for planning, implementation, and evaluation of those community development activities. The CLDs can be a key coordinators and facilitators to mobilize the population in cooperation with churches, NGOs and associations.

The below figure is a proposed mechanism for commune development. This figure shows close collaboration among the government, CBOs and CLDs as the organization of representatives of residents. A CCD formulated by the representatives of 13 CLDs has not been established in N'djili yet at the end of the JICA study, although it was once formed before the re-election of CLD members in October 2008. It will be needed to establish the N'djili CCD as a coordination body among 13 CLDs and a consultation body for the commune authority.

Top down Approach (Direction and Accountability)

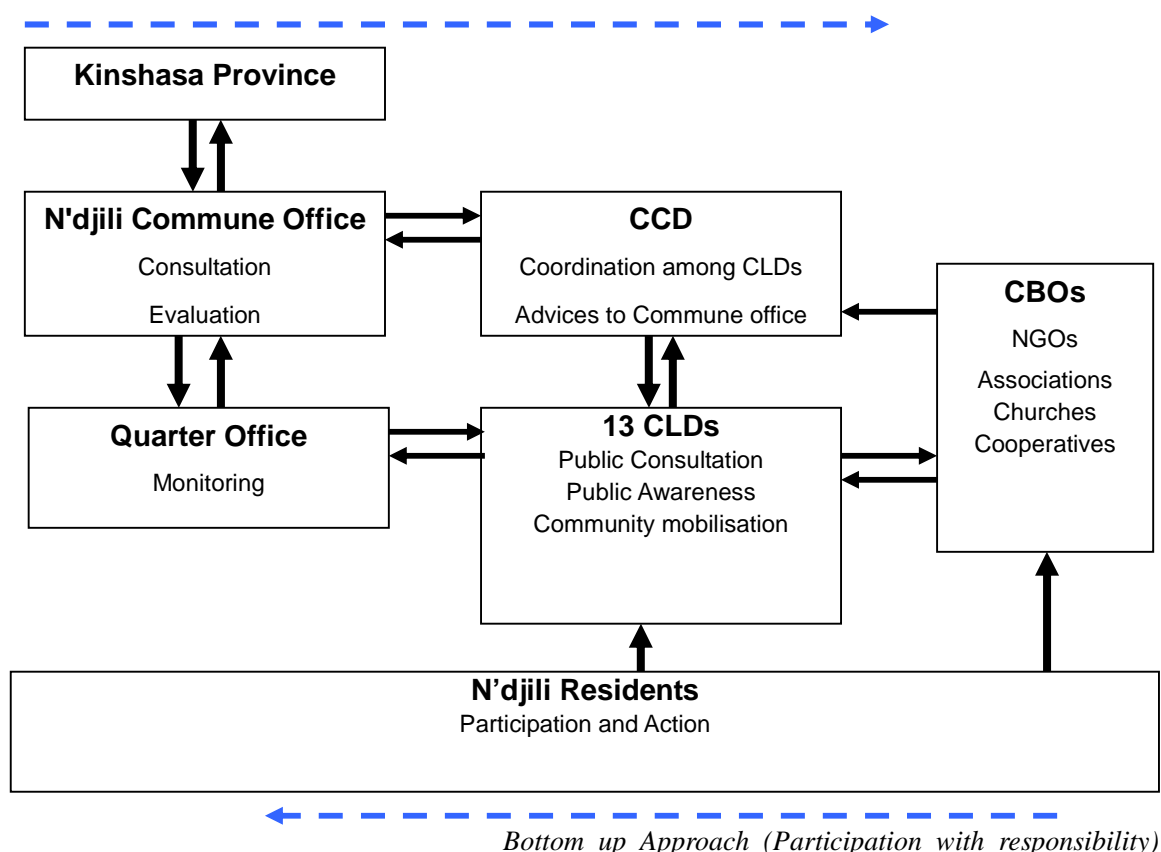


Fig. 4.1.1 Proposed Commune Development Model

4.1.2 Roles and Responsibilities of Actors

For the functioning of local development mechanism, the following roles and responsibilities should be taken by the community development actors.

(1) Kinshasa Provincial Government

As a provincial governance body, the Provincial government needs to respect the N'djili Action Plan for the commune level development intervention and coordinate with higher level development plans such as a Kinshasa city master plan. The responsible officials who are engaged in the process of JICA study, on the other hand, can utilise the Action Plan as a model of commune development plan for other communes in Kinshasa Province in the future.

(2) N'djili Commune Office

The commune office is the owner of N'djili Action plan. The office needs to prepare development budget considering the realisation of the Action plan and the target year (2018). Also, commune office needs to monitor the progress and achievement of the Action plan and may have to consider the modification of Action plan respecting both the government policy concerning development interventions and opinions from the population. The roles and responsibilities of the commune office are significant. The commune office should be the coordinator and a facilitator for holding consultation meetings with CCD and CLD members.

(3) Committee of Commune Development (CCD)

The CCD is the highest level consultation body for commune development as a grassroots institution, although it has not been established yet. It needs to take responsibility to coordinate needs and interests of the CLDs considering the common interest of commune, and to advice to the commune office as the representative of the population. On the other hand, it can provide opportunities to train or instruct CLD leaders when CLD members need to conduct development activities with the population using financial support from the government or donors.

(4) Committee of Local Development (CLD)

The CLDs are grassroots institutions close to the population. They are key for community-led development activities in the field working together with the population and other forms of CBOs considering policies of the government or donors. They need to conduct public consultation, community mobilisation and awareness building of the residents and CBOs when they plan, do and supervise community development activities. Having a good relationship and cooperation with the CBOs such as NGOs, churches, and associations is significantly important for them, because it is difficult for them to implement any development projects without cooperation with other civil society organisations.

(5) Civil Based Organisations (CBOs)

CBOs in the commune include NGOs, churches and associations. There are many CBOs working for the population in various sectors. They are key for promotion and enforcement of development activities or community actions. Churches and NGOs have significant roles of sensitising the population both in general development issues and in specific sector issues which they are working for. Associations or cooperatives can be an implementer of specific development activities such as farmers associations for agricultural project and a maintenance committee for road and gutter rehabilitation.

4.1.3 Realization of Action Plan and Securing Sustainability

Implementation of the development Action plan with sustainability requires the commitment of

not only the government and donors but also the civil society and the population. In general, the following institution arrangements are needed in each process of preparation and implementation of Action Plan.

(1) Planning Process

Through the Community Profile Survey, the JICA study team established the good relationship with the CCD members as well as the counterparts of N'djili commune office and the Provincial Ministry of Plan, Budget, Public Works and Infrastructure. The team involved these stakeholders in the process of data collection, planning workshops, and stakeholder meetings. It is necessary for the stakeholders especially the counterparts to participate in the planning activities working together with the JICA study team. On the other hand, the study team needs to coordinate with donors to finance the Action plan in the future. The Action plan should be a feasible plan with dream for the future. It is necessary to examine actual capacity and constraints of the grassroots institutions, budget allocation of the government and donors through the planning process.

(2) Process of Implementation of Pilot Project

Pilot projects will be evaluated as practices for a feasible Action plan. Lessons learned will be drawn from the pilot projects. Feasibilities concerning institutional and technical aspects are needed to verify through the implementation. Especially in capacities and capability of the grassroots institutions such as CLDs will be assessed through their participation to the project activities. Effectiveness of utilisation of local resources especially in human resources for unskilled works such as construction works, in addition, should be assessed through the implementation.

(3) Implementation and Maintenance of the Action Plan

It may have to be considered that implementation and maintenance of the Action Plan after the completion of JICA study. The counterparts and the CCD are needed to take initiative for maintaining the Action plan and the local development initiatives for sustainable commune development. Indeed, the Provincial Ministry of Plan, Budget, Public Works and Infrastructure can expand the commune level development planning activities utilizing the model of N'djili.

**4.2 ESTABLISHMENT OF IMPROVEMENT POLICY FOR URBAN PLANNING
ISSUES**

Corresponding to issues mentioned Action Plan Chapter 2 Present Conditions of the N'djili Commune, required activities for urban environmental improvement towards urban rehabilitation are shown in Table 4.2.1 as improvement policy.

Table 4.2.1 Improvement Policy for Urban Planning and Land Use Issues

Urban environment	Urban planning	Legal affairs, Implementation of plan
<p>A-1. Urban redevelopment, land readjustment - high utilization of land (advancement of reconstruction into multi-floor building) - restructuring of public space (road network, park et al.) - improvement of public space relating to redevelopment projects</p> <p>A-2. Construction and reconstruction of individual public facilities</p> <p>A-3. Voluntary prescription of construction rules in N'djili commune</p>	<p>B-1. Basic census survey for whole Kinshasa Province.</p> <p>B-2. Development policy making and preparation of Urban master plan for whole Kinshasa Province - political decision making - inter ministerial counsel - discussion and negotiation with every commune for future prospect</p> <p>B-3. Prescription of construction rules according to local condition and customs</p>	<p>C-1. Enhancement and complementing of legal system concerning urban planning, construction and land use</p> <p>C-2. Strengthening capability for observation and verification on construction activities - its entrustment to residents' association for example</p>

Details of each activity are as follows.

A-1: Urban redevelopment, land readjustment

Execution of both urban redevelopment project and land readjustment project is desired for improving urban space and its environment in the long term. By this project, high efficiency of land use, introducing enough public spaces and improvement of road network system are expected.

A-2: Construction and reconstruction of individual public facilities

Individual public facilities should be repaired and newly constructed based on level of necessity, with the exception of urban space improvement project in large scale.

A-3: Voluntary prescription of construction rules in N'djili commune

It is thought that it needs a long time to establish urban planning plans and rules applied to N'djili commune that is based on the legal system in DRC. Also official procedure for its recognition will be required in order to enforce their contents. For short term, most effective and possible way for improvement of urban space is to decide its plans and rules as voluntary rules based on agreement of residents.

B-1: Basic census survey for whole Kinshasa province

As mentioned in Action Plan Chapter 2 and Chapter 3, the basic information for urban planning of Kinshasa city is insufficient and incomplete. And this is one of premises to carrying forward planning process on urban planning and land use matters. At the very least, current population, land use and their tendency should be grasped at all communes in the Kinshasa province. The Study applied summary survey for N'djili commune with presumption due to limited period and

target area of The Study. Surveys in same method in other communes are expected to be done at an early stage.

B-2: Development policy making and preparation of the urban master plan for whole Kinshasa Province

About urban planning and land use planning for Kinshasa province, a concrete frame for development, land use system and planning index should be discussed not only with commune and local offices but also wider participants including ministries and central government. In its particular case, proper time period for legislation and appropriate procedure should be considered.

B-3: Prescription of construction rules according to local condition and customs

Mentioned in Main Report Chapter 3, localised regulations for controlling development and construction activities should be studied. For this issue, approaches from two sides, from government and from residents, are considered. The approach from the government is expected to set up general rules and to institutionalize them. About this matter, collaboration with central government is indispensable. The approach from the residents is expected to set up effective rules reflecting their opinions through participatory approach. For its practice, closer relationship between representatives of residents, experts of commune and province is necessary.

C-1: Enhancement and complementing of legal system concerning urban planning, construction and land use

Relating to ruling procedure by government side mentioned in B-3, Fig 4.2.1 shows a tentative plan for complementing current legal system concerning urban planning, construction and land use. The plan intends to enhance ruling on inter sectoral issues and preparatory works.

C-2: Strengthening of capability for observation and verification on construction activities

The article 25 of the 'Decree of 20 June 1957 on Town Planning' prescribes that the general governor can designate and appoint the person who is in charge for observation on construction activities. Relating to this article, it is proposed to commission part of observation works to representative resident group officially. This proposition targets secondary effects as follows.

- Promote of information of urban environmental improvement and urban planning to resident group
- Enlightenment on town management and planning issues
- Training on residents group for voluntary problem finding, planning and management on urban environment

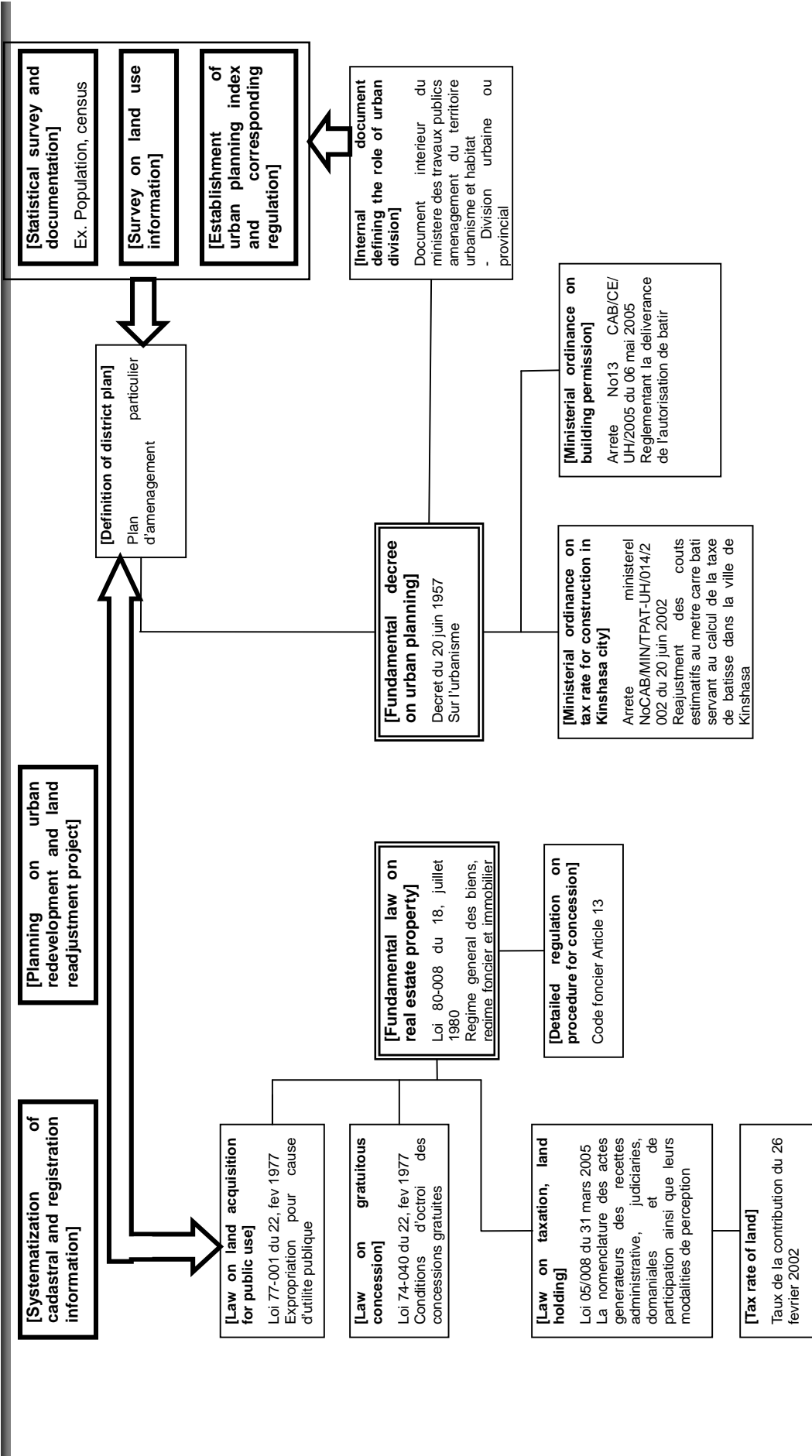


Fig. 4.2.1 Proposed Legal System Concerning Urban Planning, Construction and Land Transaction

4.2.1 Improvement Programmes for Urban Planning and Land Use Issues

Corresponding to policies mentioned above, proposed activities and their operating periods are shown in Fig. 4.2.2. Relations between each activity are also shown in the figure, and two programmes are proposed as a result.

(1) Civic Group Based Town Management Program

The program intends to train residents group on urban management and planning issues. Commission on part of observation works is intended to clue the following voluntary town management activities by residents' group. These activities are expected to be advanced for projects on improvement of urban environment and urban redevelopment in the long term.

(2) Facility Improvement Based Program

The program intends to support residents' group in its requests to improve and to newly construct public facilities for related organizations. In N'djili commune, environmental improvement of market area and construction of facilities for agricultural activities such as a public cold storage are recommended to be considered for this program. Applying this program to other sectorized issues should be considered also.

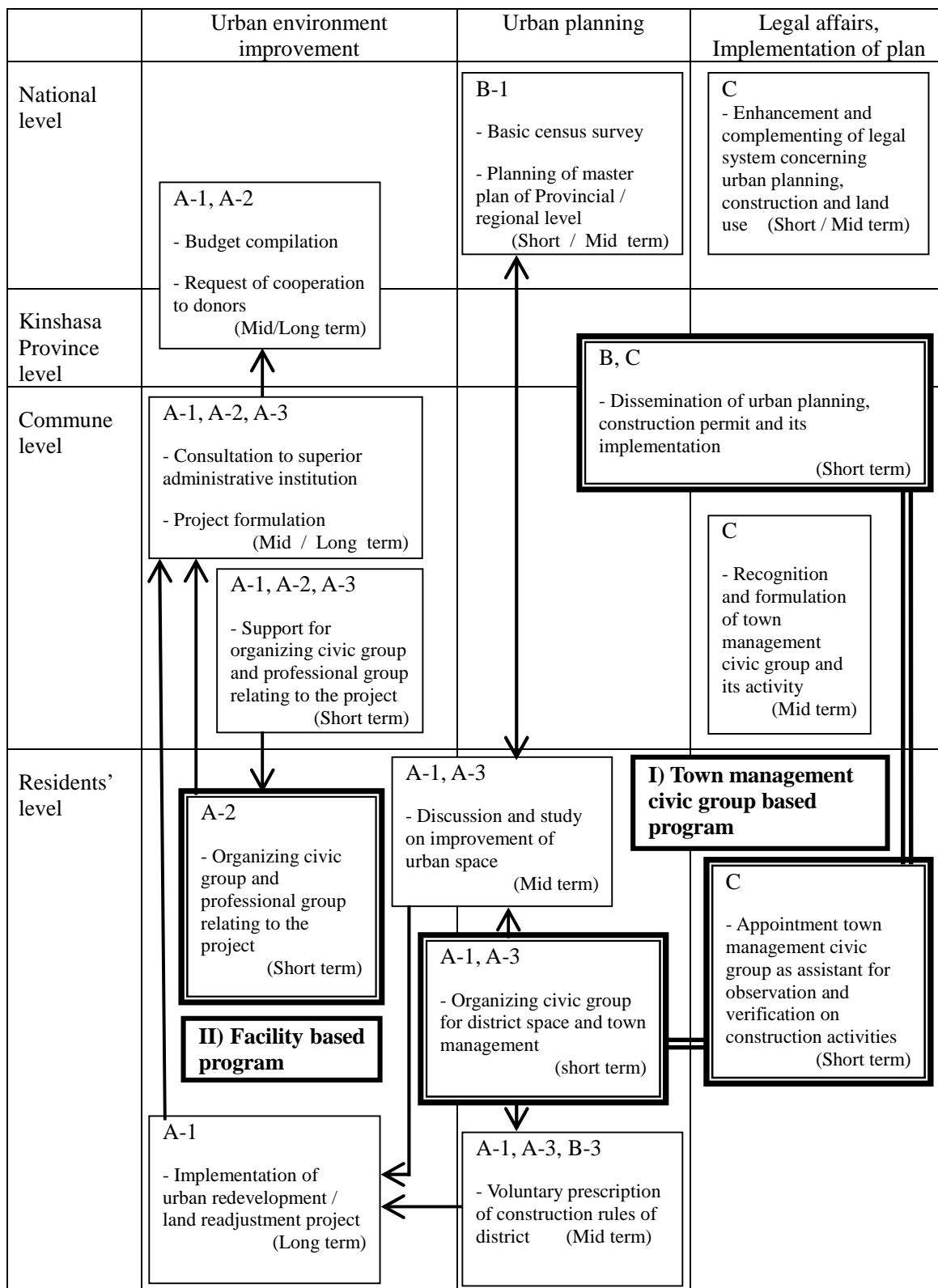


Fig. 4.2.2 Improvement Activities for Urban Planning and Land Use Issues

4.2.2 Land Use Restructuring Policy

In addition to the urban environmental improvement programmes mentioned in 4.2.1, directive land use plan of N'djili commune is explained in 4.2.2. The discussion about direction of improvements should yield consensus on future prospects between both the residents and the government. For examination on future land-use and environmental improvement project of urban spaces in N'djili commune, the following are enumerated as the content that should be considered in the reorganization policy.

(1) About new Development Site

There is no land that can be newly developed in N'djili commune. It is necessary to reorganize existing blocks in urban area to correspond to an overpopulated situation, and to promote their advanced use.

(2) About Agricultural Land

The farmland on east shore of N'djili River is a valuable agricultural site in the Kinshasa outskirts. The productive activity there is limited livelihood for agricultural pursuer. Moreover, it functions as a river buffer zone and easing the erosion of land. The geological features of present agricultural site are considered not suitable for construction. So it should be preserved in the future land-use plan.

(3) About the Land Use System

Considering the current situation of the legal system concerning city planning and construction permission applied to N'djili commune and Kinshasa city, short mid-term effect by the introduction of the control measure based on the subdivided land use division adopted in the advanced country cannot be expected. The mechanism of a clear land use restriction doesn't exist in the law and the legal system now. Moreover, mixed used house combined with shop and atelier occupies many parts in the commune excluding specific facilities such as commercial establishment on the trunk road, market, school and hospital, etc. For this circumstance, the possibility of establishing detailed land use system and regulations that are suited to the local lifestyle is quite low. Therefore, The Study proposes an examination of the building capacity of the whole commune and the entire quartier, and provision for the rough land use policy at the commune level, instead of precise zoning with land use categories.

(4) Development of Architectural Capacity

Since the Commune already suffers from overcrowding, the remodelling of existing building into multilayered structures is needed to secure enough floor space for residents. It is not expected that remodelling of the building in the commune would be advanced rapidly in the short term from the viewpoint of its cost implications. Moreover, a forcible introduction to multilayer building might

overflow low quality buildings that would pose a safety problem. When these situations are considered in totality, the evolution of the present one-storeyed house constructions into two storeyed and three storeyed constructions with the adjunctive acquisition of public space and communal facilities in accordance with the construction of multi-layered structures is a realistic and feasible measure for the medium/long term.

(5)Reorganization of Land Use

After the execution goal of the above-mentioned measure and its systematic framework are set up, it is necessary to divide its land use for the long term into a residential, commercial and industrial land use. The commercial zone should be arranged along the main districts road from the viewpoint of the functional, hygiene and safety reasons. Furthermore, industrial and handicraft land use would be placed near to the primary district road to secure smooth access.

4.2.3 Urban Space Improvement Scheme

(1)Correspondence to Wide Urban Area Function

In the urban master plan by BEAU in 1975, a connecting road with Matete commune that is adjacent to N'djili commune and the east-west bypass road that passes over the south of N'djili commune are planned in addition to Bld. Lumumba corresponding to the city development in the direction of east and west of Kinshasa. For the road between Metete and N'djili commune, it is difficult to secure construction site because the urbanization of Matete commune has progressed. Therefore, land use plan of N'djili commune in consideration of this road is inapposite. The matter of the latter should be examined in the future, from the viewpoint of the improvement of excessive concentration traffic on Bld. Lumumba and the response to the city development toward the south of today.

It is necessary to work on the rehabilitation and the high standardization of Route Nsanda in consideration of the south to the by-pass road in the future for the future plan of N'djili commune. However, it is not appropriate to plan and design the Route Nsanda for through traffic from the land use situation around the road. It is necessary to supplement the south north traffic in N'djili commune with other road networks even locating Route Nsanda as the trunk road.

(2)Collaboration with the Vicinity Commune

It should be assumed the functional cooperation of district (5 communes) including N'djili commune is corresponding to the city development in the eastern part of Kinshasa of the future. In the short to mid-term, it is necessary to correspond to the traffic systems between communes of the future, and to advance securing the site gradually. It is necessary to advance improvement of the radial road between Quartier2 and 3 as a primary traffic road with Kinbabseke commune that is adjacent to the east with land. Also environmental improvement of the functional enhancement

surrounding of Route Bangala is also required. In the improvement of the traffic with adjoining Masina commune to the north, it is necessary to advance the improvement of the intersection of the access road from N'djili commune and Bld. Lumumba.

(3) Reconstruction of Road Network in District

The wide width radial roads of N'djili commune were constructed when the ancient quarters (Quartier 1-7) were developed initially. All traffic tends to concentrate to the central ring road that surrounds quartier 7, under the network on a current radial road. Considering the enhancement and a population increase of N'djili commune, there might be a problem in its traffic efficiency and safety. In a mid-term frame, an existing road is proposed to be connected and an outer ring road constructed.

(4) Upgrade of Land Use

The majority of the buildings in N'djili commune are the one-storied construction, although it is density area. In attempting the improvement of the living environment and living conditions under the situation of the delimitation of land, it is necessary to attempt the construction of the multilayered buildings and introduction of communal facilities (road, park, and district facilities) by redeveloping the district at the same time. Because the budget used for such redevelopment is expected to be limited, it is necessary to attempt the strategically urban space improvement along the frame of the city planning. The issue that should be considered for each district is enumerated as follows.

Quartier 7: It is a central district of the commune, and the only quartier where administrative facilities and external business facilities are located. It is a quartier that helps the development of N'djili commune, and it is aimed at the improvement of infrastructural facilities such as roads and communal facilities in the district. It is also necessary to advance the construction of the multi layered business facilities.

Also, it is preferable to attempt the modernization of the market (Marche). Total area for Marche in Quartier 7 is about more than 20,000 m² which is scaled on the Map. But there are shops, some buildings, dwelling in strong –built construction in the site; therefore the area of approximately 5,500 m² can be utilised for improvement to the Marche. Actually about 250 shops are in active business in the marche and they pay daily tax to Commune. 40% of the tax is returned to the Marche for the management and maintenance. Prior to the commencement of the plan, the consensus of all concerned people and movement to another place by shop owners during construction period shall be sought.

The present office was founded in 1950's. Its structural frame is so old and there is partial damage to some finishing materials for the walls and roof. The program of Rehabilitation for the Bureau

de Commune shall be considered and studied in the Master Plan. Administrative offices such as Police station or Post office are focused in the open space around the Bureau de Commune. This zone is a core of Commune de N'djili. The development plan for the refreshment of public square shall be studied on the Master Plan in accordance with the program of Province Kinshasa "Espace Nouvello".

The redevelopment according to new construction of the ring road: The road construction and the district redevelopment described in (3) are planned to be done at the same time. A public space enhancement and the improvement of residential districts' environment are targets for this project. Additionally, the social infrastructure that corresponds district commercial facilities and the light industries facilities should be improved and enhanced.

A concrete redevelopment model is described in 4.3.

Environmental improvement in the surrounding area of Route Nsanda: The road improvement for the south north principle traffic road and redevelopment of city blocks on the east side of the road should be executed together. The redevelopment model similar to the above-mentioned ring road might be applied.

Environmental improvement in Quartier 2: The improvement of the boundary road of quartier2 and quartier3, and its surrounding district would be redeveloped at the same time.

(5)Construction of Agricultural Road

Because Quartier8 and 9 are located on relatively smooth sloping ground that descends to N'djili River, the district redevelopment similar to other quartiers would be difficult. The improvement of the district environment is planned to be attempted by rehabilitating agricultural roads and area environmental improvement around the road additionally.

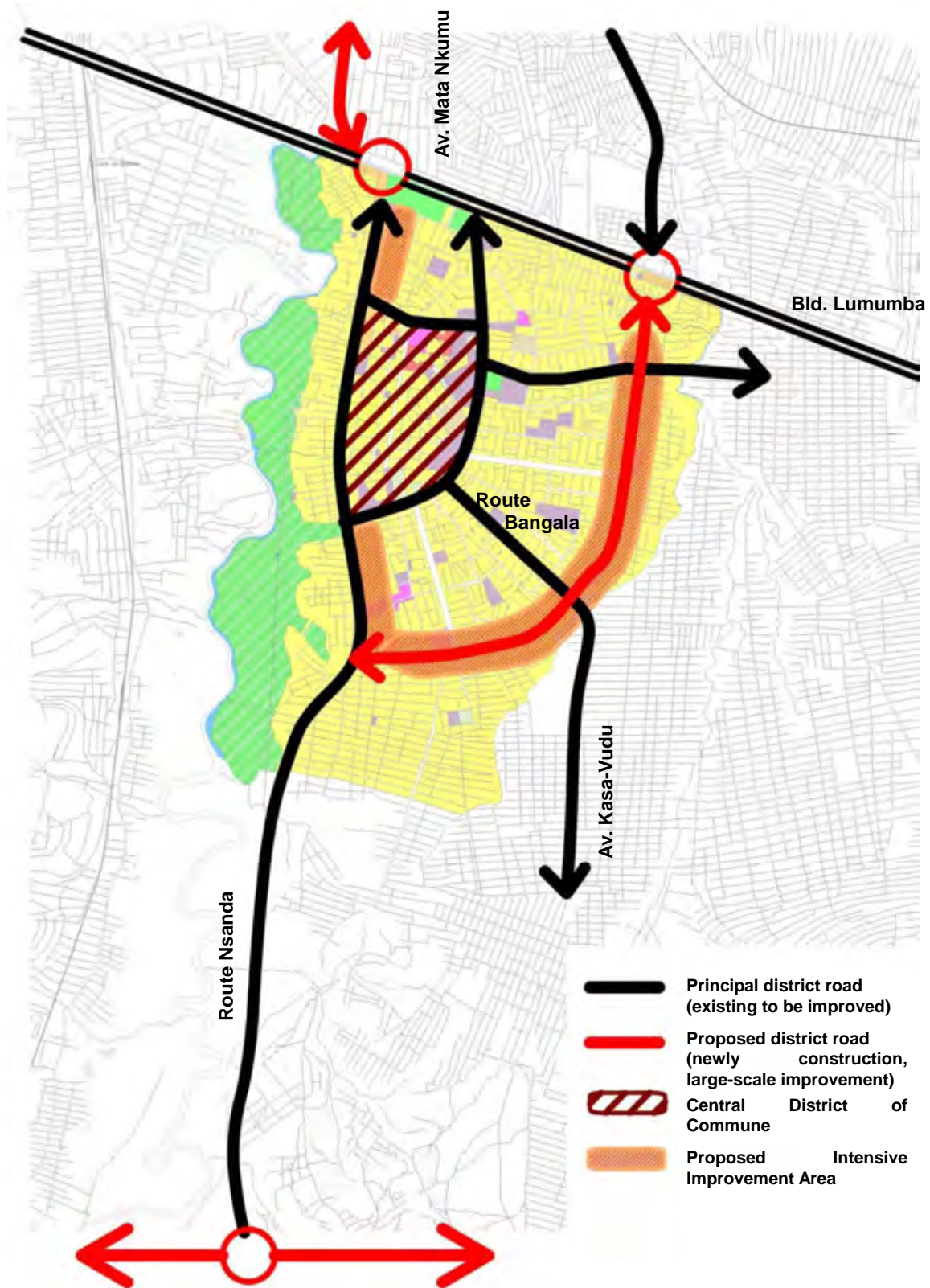


Fig. 4.2.3 Urban Space Structure in N'djili

4.2.4 Development Capacity

(1) Developing Scheme in the Commune

The development capacity is examined about the ring road and the Route Nsanda environmental improvement that relates to a mid/long-term residential environmental enhancement mostly among the district improvement programs proposed in 8-3. The following content is assumed as a district improvement program.

- In this redevelopment area, the road of width about 15m is constructed in the centre and rebuilding the structures as multilayered buildings is advanced on both sides of the road.
- A necessary public facilities site is secured in the redevelopment area. The cost for district environmental maintenance and reconstruction into multilayered building is managed by delivering and selling these communal facilities sites and road sites.
- The land use after its improvement it assumes 75% for residential and mixed use area, 5% for the public facilities site, and 20% for road area.
- The building constructed by the redevelopment assumes three storeys. The promotion of the business is attempted by easing its building coverage ratio to 50 percent in consideration of contribution to the district environmental enhancement.

(2) Trial Calculation of Development Capacity

The land use balance by the redevelopment by the scheme assumed to 4.2.4 (1) is shown in Table 4.2.2. Moreover, the balance of building capacity by the improvement project is shown in Table 4.2.3.

Table 4.2.2 Land Use Surface Balance by the Project

Quartier No.	redevelopment area (ha)	Site surface of current landuse (ha)		Site surface of future landuse (ha)		
		Residence/ Mixed use	Road	Residence/ Mixed use	Public Facility	Road
(planning index)				75%	5%	20%
Quartier 01	3.20	2.78	0.42	2.40	0.16	0.64
Quartier 02	(improvement will be done by other scheme)					
Quartier 03	3.47	2.89	0.58	2.60	0.17	0.69
Quartier 04	4.55	3.73	0.81	3.41	0.23	0.91
Quartier 05	4.21	3.48	0.73	3.16	0.21	0.84
Quartier 06	7.47	6.48	0.98	5.60	0.37	1.49
Quartier 07	(improvement will be done by other scheme)					
Quartier 08	(improvement will be done by other scheme)					
Quartier 09	(improvement will be done by other scheme)					
Quartier 10	12.22	10.97	1.25	9.16	0.61	2.44
Quartier 11	2.19	1.98	0.21	1.64	0.11	0.44
Quartier 12	1.04	0.85	0.19	0.78	0.05	0.21
Quartier 13	3.43	3.07	0.36	2.57	0.17	0.69

Table 4.2.3 Building Surface Balance by the Project

Quartier No.	redevelop- ment area (ha)	Floor surface of current residential/Mix use building		Site surface of future landuse		Residential / mixed use building floor of whole quartier		
		Site surface (ha)	Building floor (sqm)	Site surface (ha)	Building floor (sqm)	current surface (sqm)	surface after redevelopment (sqm)	increase rate
		A	a*0.45*1.1	B	b*0.5*3	C	D	d/c
Quartier 01	3.20	2.78	13740	2.40	36000	179,685	201,945	1.124
Quartier 02	(improvement will be done by other scheme)							
Quartier 03	3.47	2.89	14285	2.60	38981	209,187	233,883	1.118
Quartier 04	4.55	3.73	18465	3.41	51131	222,552	255,218	1.147
Quartier 05	4.21	3.48	17224	3.16	47363	247,896	278,034	1.122
Quartier 06	7.47	6.48	32089	5.60	83981	193,050	244,942	1.269
Quartier 07	(improvement will be done by other scheme)							
Quartier 08	(improvement will be done by other scheme)							
Quartier 09	(improvement will be done by other scheme)							
Quartier 10	12.22	10.97	54286	9.16	137419	208,890	292,022	1.398
Quartier 11	2.19	1.98	9803	1.64	24638	230,324	245,158	1.064
Quartier 12	1.04	0.85	4216	0.78	11700	156,915	164,399	1.048
Quartier 13	3.43	3.07	15212	2.57	38588	461,142	484,518	1.051
Total						2,109,641	2,400,121	1.138

4.2.5 Evaluation on Trial Calculation and Problems in the Future

An increase in building floor capacity of 13.8% is expected from the trial calculation of 4.3.3 by the improvement in the blocks surrounding the principle district road. Additionally, considering the effect of individual rebuilding in the commune and improvement in the quartiers 2 and 7, an increase of building capacity of about 16~17% for the whole commune can be expected. However,

the rate of annual population increase assumed is 1.8%, and the living environments will deteriorate more than at present rates if it takes ten years for the execution of this improvement scheme. Not all problems will be solved by this strategy; however the level of deterioration on the living environment can be decreased by the improvement.

Moreover, the scale of the above-mentioned improvement project is very huge, and the implementing period is expected to exceed ten years. It is necessary to advance the small-scale improvement project intended individual facilities and sectors for the district improvement in N'djili commune while continuing the land use reorganization of the entire district level as a long-term measure. Furthermore, it is necessary that assistance from the central government, Kinshasa City, and foreign countries is forthcoming for the execution of the urban development. However, the concerned parties' mutual agreements, especially on the matters of land, are required for the project to be supported by donors. In advancing an urban environmental improvement and the land use reorganization in N'djili commune, it is necessary for the centred commune and the district residents as persons concerned to establish consensus, to promote the project and to advance the appeal to each organization. The organization of resident associations for this activity is also a critical issue at the same level as the physical planning.

4.3 URBAN INFRASTRUCTURE

4.3.1 Main Problems, Action, Goal and Development Policies for Urban Infrastructure

(1) Main Problems

Based on the present condition analysis of the Urban Infrastructure, compiled in Chapter 2, identified Main Problems is described as below.

1) Lack of road rehabilitation works

Pavement roads in N'djili are 6.8km long only. Furthermore, most of those pavement conditions are severely deteriorated to rehabilitate urgently. Volume and space of roads and intersections are also not adequate to relief currently generating traffic congestion. No proper side drains system and not enough cleaning services as well. At least, main roads/streets in the center of commune, such as Luemba Boulevard required urgent rehabilitation. Due to the stagnation of transition period to decentralization, tasks and duties of relevant road administration authorities are not clear, as well development budgets also not enough. Therefore community participation approach for infrastructure maintenance works, broadly known as Labour base Technology (LBT) can be recommended to introduce N'djili.

2) Lack of urban spaces and infrastructure facilitate urban growth

Most of urban facilities, such as public market and toilets are obsolete. Urban environment in N'djili needs improvement. Some streets and public spaces are notably duty with trash. Urban core zone

(Q7) in N'djili, concentrated administration offices and service area, required some rehabilitation/repair works for facilitation of urban growth. Not only commune wide, but also quarter level, Community Core Zone Development is required as well. Obviously, to fulfill the goal of those activities, Capacity Development for Provincial Urban Planning Sections of the Province and community are crucial factors for success.

3)Lack of road facilities can manage increasing traffic demand and ensure traffic safety

Many roads are not equipped adequate road safety facilities/gears. Those facilities, such as stree lights, pedestrian roads, traffic sign, and humps, etc., are recomended to facilitate respectively.

4)No proper public transport facilities, such as bus stops

In spite of 40% of N'djili residents are relying on public transportation for commute, bus networks, services and facilities are need improvement.

5)Insufficient road network system

Long term transport/road network master plan is absent. This is one of reasons of insufficient network systems in N'djili. After completion of necessary rehabilitation actions, at Long term stage (2018-), integrated road master plan will be required as a mitigation approach for generating traffic congestion.

(2)Action by Provincial Government, Commune and Residents

To resolve above Main Problems, identical tasks of Urban Infrastructure in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1)Action by Provincial Government

Following urgent activities required by Government

- Rehabilitation of Luemba Boulevard.
- Rehabilitation of existing paved roads.
- Improvement of N'djili Junction to relief traffic congestion.
- Installation of Sidewalk and Traffic safety facilities/Pedestrian crossings, Traffic sign, Humps, etc.
- Improvement of Tertiary Roads.
- Capacity Development for Provincial Urban Planning Sections of the Province.
- Improvement of bus route network, bus terminal, bus stops
- Development of integrated road network plan. (Long Term)

2)Action by Commune

Following urgent activities required by Commune

- Rehabilitation of community roads by Labour based Technology (LBT).
 - Rehabilitation of urban core zone (Q7).
 - Development of Community Core Zone.
-

3) Action by Residents

Following urgent activities required by Residents

- Clean-up gutters together with the sanitation brigade
- Planting flowers and tree along streets

(3) Goal

The Goal of Urban Infrastructure is “Making Beautiful Urban Space through the Improvement of Accessibility for Transportation and Road Surface Condition, as well Expansion of Public Transport Services Network.”

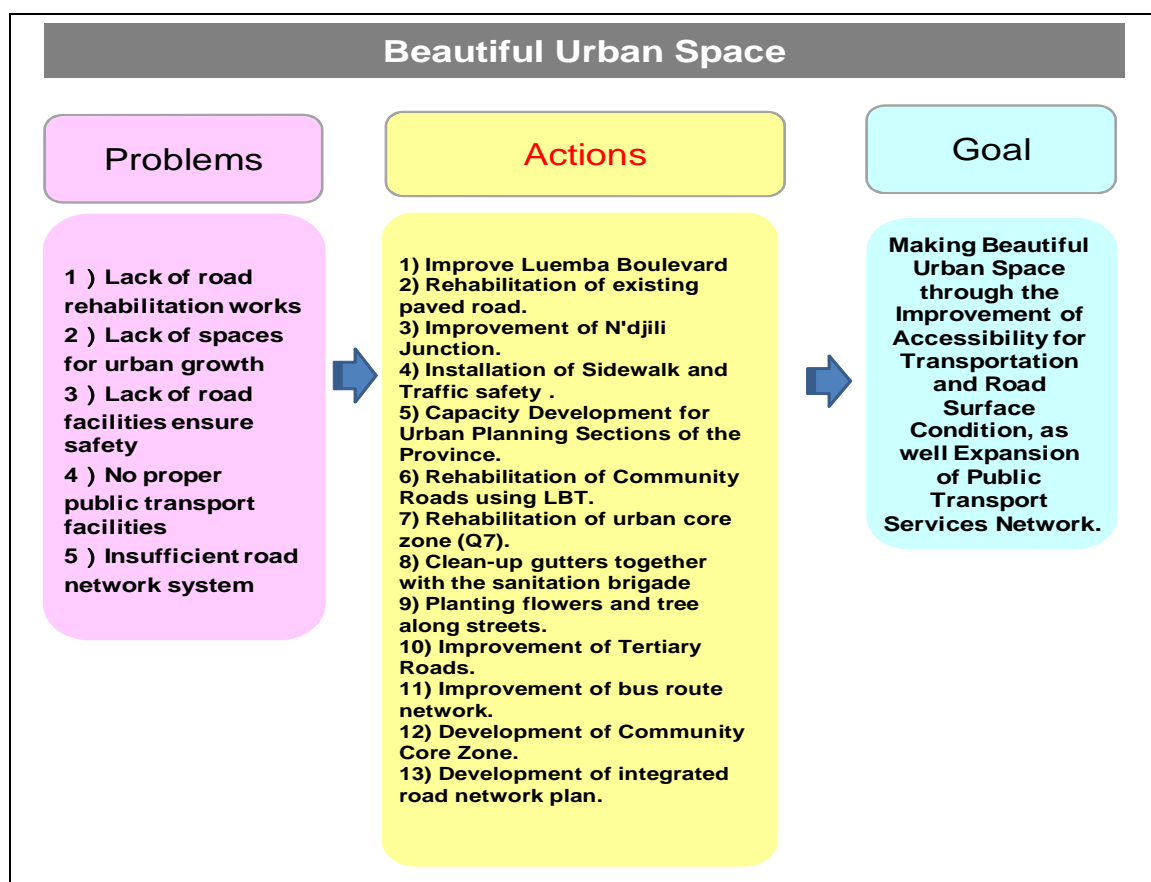


Fig. 4.3.1 Problems, Actions and Goal of Urban Infrastructure

(4) Development Policy

To achieve assigned Goal, following Development Policies relevant to identical actions are established as following.

Policy	Action
Establish adequate road and drainage maintenance system by community participation	<ul style="list-style-type: none"> • Improve Luemba Boulevard as a main street of N'djili. • Rehabilitation of existing paved roads. • Improvement of N'djili Junction to relief traffic congestion. • Rehabilitation of community roads by LBT. • Clean-up gutters together with the sanitation brigade
Ensure the sustainable urban growth with strong and stable economy	<ul style="list-style-type: none"> • Capacity Development for Provincial Urban Planning Sections of the Province. • Rehabilitation of urban core zone (Q7). • Development of Community Core Zone. • Planting flowers and tree along streets • Enhancement of participatory approach for community development
Satisfy increasing traffic demand and ensure traffic safety and security	<ul style="list-style-type: none"> • Installation of Sidewalk and Traffic safety facilities/Pedestrian crossings, Traffic sign, Humps, etc. • Improvement of Tertiary Roads.
Enhance equal accessibility and promote public transport	<ul style="list-style-type: none"> • Improvement of bus route network, bus terminal, bus stops
Establish adequate road network system with accessibility (Long Term)	<ul style="list-style-type: none"> • Development of integrated road network plan.

4.3.2 Design Criteria for Road Infrastructure Development

There is a design standard in DRC; however this design standard is especially for rural roads made by road agency. Design standard of cross-section component, design speed for urban road in Kinshasa was decided in reference to Japanese standard in Japan road guidelines. Reference for road infrastructure development, the Roads Standard in Kinshasa summarized as following.

(1) Composition of Cross-section

1) Carriageway

a) Design Speed

The design speed was set as follows according to each road classification based on Japanese standard in Japan road guidelines in which design speed is set for all roads except highway or expressway.

Table 4.3.1 Width of Carriageway (Japanese Standard)

Road classification		Speed (km/h)	
		Standard	Desirable
Rural road	Class-1	80	60
	Class-2	60	50 or 40
	Class-3	60, 50 or 40	30
	Class-4	50, 40 or 30	20
	Class-5	40, 30 or 20	-
Urban road	Class-1	60	50 or 40
	Class-2	60, 50 or 40	30
	Class-3	50, 40 or 30	20
	Class-4	40, 30 or 20	-

Notes: All roads except highway

Source: Japanese road guidelines, Japan Road Association

Table 4.3.2 Applicable Design Speed

Road Classification	Speed (km/h)	Notes
Primary Road	50-40	
Secondary Road	40-30	
Tertiary Road	30-20	
Local Road	20	

Source: Japanese road guidelines, Japan Road Association

b) Lane Width

Taking into account the current width of roads in N'djili Commune, the width of carriageway was set as follows according to each road classification based on Japan road guidelines because the situation of road width is similar to Japanese road condition as a result of the road inventory survey.

Table 4.3.3 Width of Carriageway (Japanese Standard)

Road classification		Width (m)	Notes
Rural road	Class-1	3.50	
	Class-2	3.25	
	Class-3	3.00	
	Class-4	2.75	
	Class-5	-	No centre line
Urban road	Class-1	3.25	
	Class-2,3	3.00	
	Class-4	-	No centre line

Notes: All roads except highway

Source: Japanese road guidelines, Japan Road Association

Table 4.3.4 Width of Lane

Road Classification	Width (m)
Primary Road	3.25
Secondary Road	3.00
Tertiary Road	3.00
Local Road	2.75

Source: Japanese road guidelines, Japan Road Association

c) Shoulder Width

The width of shoulder was also set according to Japanese standard in Japan road guidelines. The shoulder width of primary road and Secondary road was decided according to the Japanese standard of rural road class-1 and minimum standard of parking lane of urban road in Japan. The shoulder width of Tertiary road and Local road was set to 0.5m which is minimum width of shoulder in Japanese standard.

Table 4.3.5 Minimum Width of Shoulder (Japanese Standard)

Road classification		Width (m)					
		Left			Right		Tunnel
		Normal	Special	desirable	normal	Desirable	
Rural road	Class-1	1.25	0.75	1.75	0.50	0.75	0.50
	Class-2	0.75	0.50	1.00	0.50	0.75	0.50
	Class-3	0.75	0.50	0.75	0.50	0.50	0.50
	Class-4	0.75	0.50	0.75	0.50	0.50	0.50
	Class-5	0.50	-	0.50	0.50	0.50	0.50
Urban road	All	0.50	-	0.50	0.50	0.50	0.50

*Notes: All roads except highway
Urban road have basically parking lane (minimum 1.5m)
Left shoulder is in case of dividing by anyway except the median
Source: Japanese road guidelines, Japan Road Association*

Table 4.3.6 Width of Shoulder

Road Classification	Width (m)	
	Right	Left
Primary Road	1.50	1.00
Secondary Road	1.50	1.00
Tertiary Road	1.00	0.50
Local Road	0.50	0.50

2) Sidewalk

a) Development Policy for Sidewalk/Bicycle Lane

Since pedestrian and bicycle users involve far different style and speeds than automobiles, it is basically desirable to provide exclusive spaces, however, it is not economical to provide such spaces on all roads. Therefore, it is important to base decisions on a general examination of traffic volumes, speed differences and roadside conditions, etc. between each mode. Generally speaking, since it is dangerous for bicycles to run on carriageways and since it also impedes the vehicles, the minimum requirement is to separate the two. On the other hand, in the case where pedestrians and bicycles travel in the same space, there is a risk that friction occurring between the two will adversely impact the safety and pleasantness of passage for both. Accordingly, in cases where bicycle traffic volume is extremely large, it is considered necessary to adopt the bicycle exclusive lanes. Accordingly, minimum width was set upon taking these figures and road structure criteria in Japan (sidewalk and bicycle/sidewalk).

Table 4.3.7 Minimum width of Walkway

Items	Bicycle	Pedestrian	Bicycle and Pedestrian
Width of walkway	2.0m	2.0m (1.5m)	3.0m

() special case

b) Development policy of sidewalk and bicycle-lane

Based on the above points, the following development policy for sidewalk and bicycle-lane according to road classification is suggested. Local roads in communities are generally used only by local residents and traffic volumes are limited.

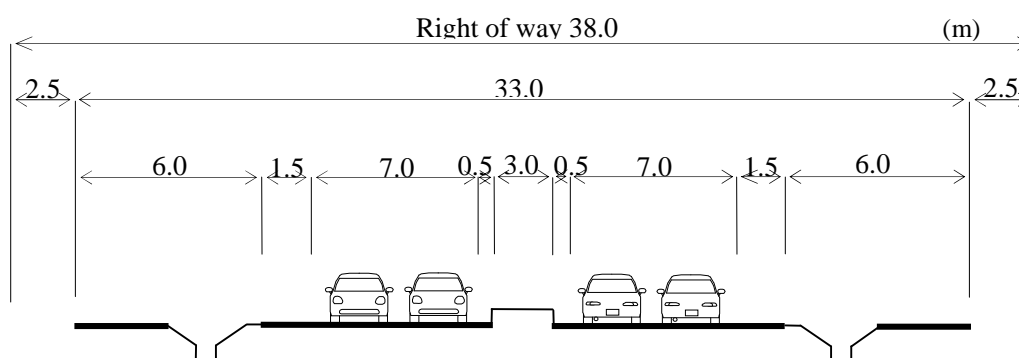
Table 4.3.8 Policy of Sidewalk Development

Road Classification	Number of Cars	Number of Pedestrian	Desirable Width	Notes
Primary Road	Many	Many	3.0m	Separate Pedestrian from car, bicycle
Secondary Road	Many	Many	2.0m	Separate Pedestrian from car
Tertiary Road	Little	Little	1.0m	Separate Pedestrian from car
Local Road	Few	Little	-	Not separate Pedestrian from car

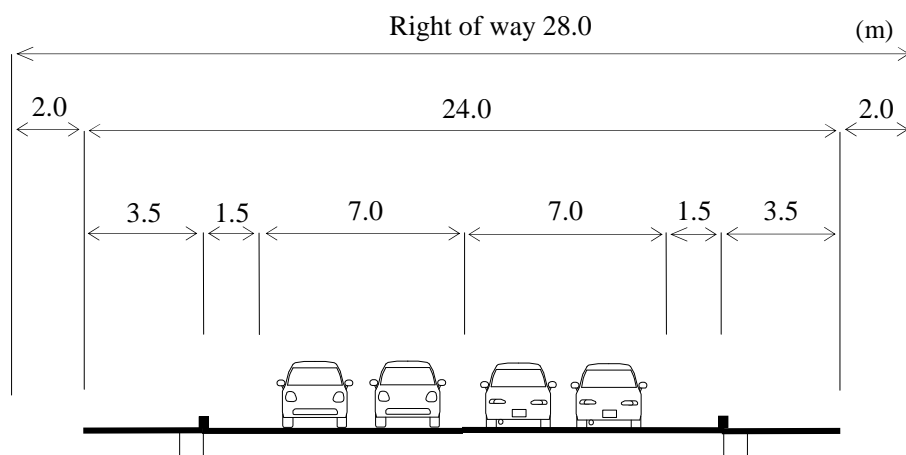
c) Typical cross section of each road classification

Primary road

4 Lane Section (National Road)



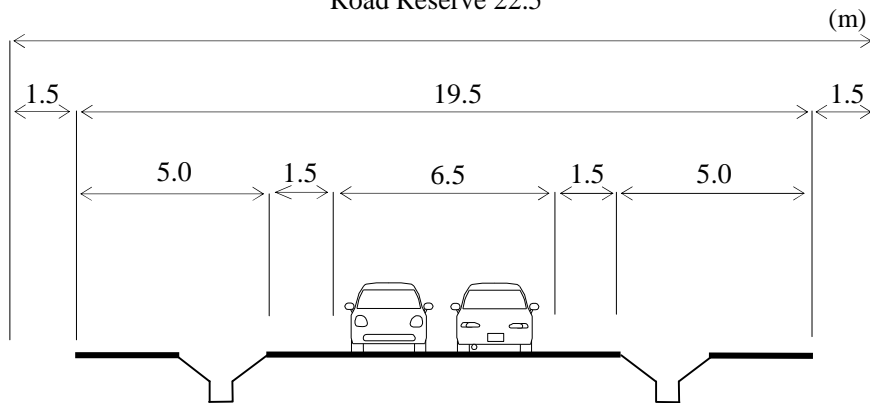
4 Lane Section (Minimum)



U-shaped Drain

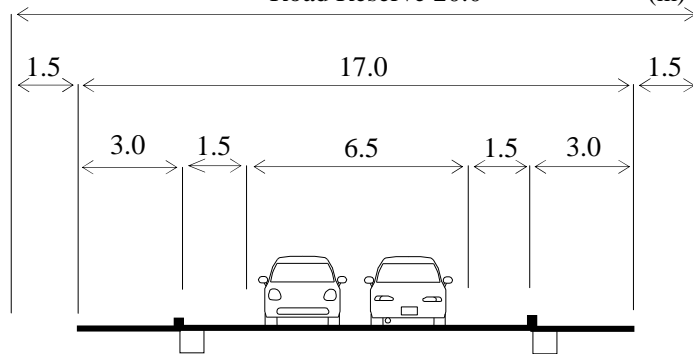
2 Lane Road (Commune Road)

Road Reserve 22.5



2 Lane Road (Commune Road/ Minimum)

Road Reserve 20.0

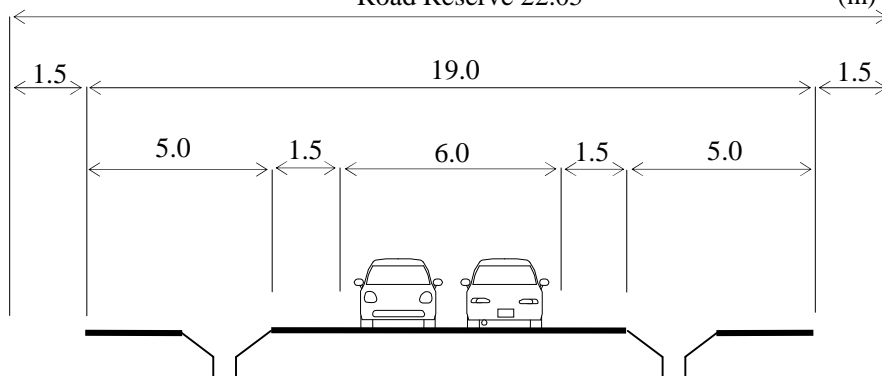


U-shaped Drain

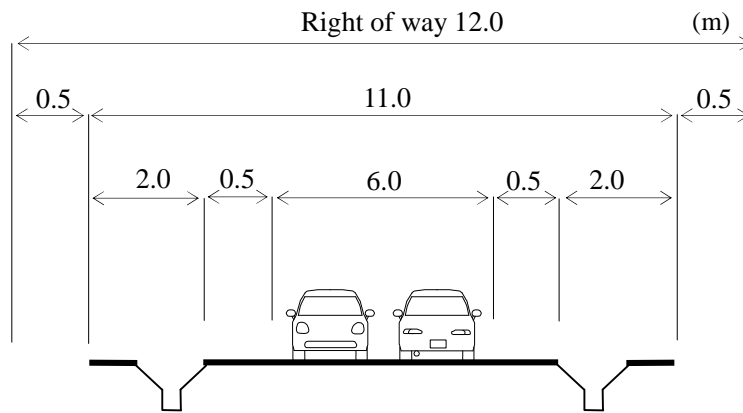
Secondary Road

2 Lane Road (Desirable)

Road Reserve 22.05

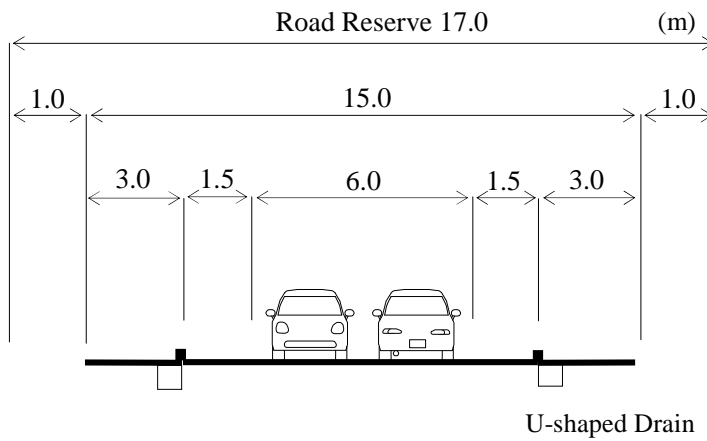


2 Lane Road (Minimum)

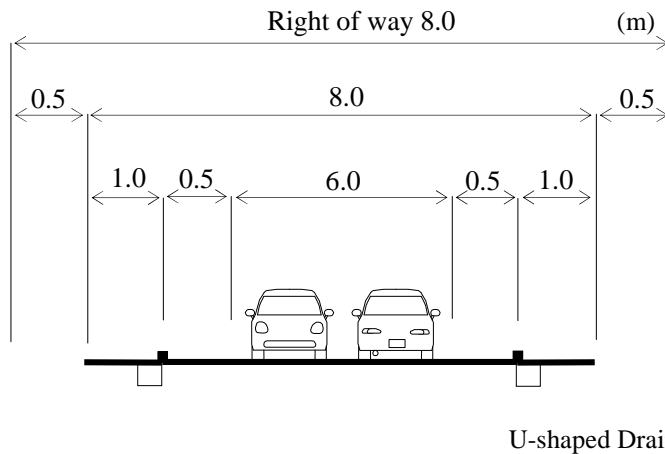


Tertiary road

2 Lane Road (Desirable)



2 Lane Road (Minimum)



Local road

2 Lane Road

Right of way 6.5

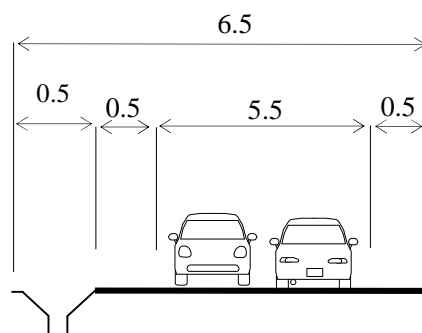


Fig. 4.3.2 Typical Cross Section by Road Classification

Table 4.3.9 Summary of Design Criteria

	Road Classification			
	Primary Road	Secondary Road	Tertiary Road	Local Road
Design Speed (km/h)	50 – 40	40 – 30	30 – 20	20
Road Reserve (minimum)	38.0 (4 lane) 27.0 (2 lane)	23.5	20.0	12.5
Lane Width (m)	33.0 (4 lane) 22.0 (2 lane)	19.5	16.0	10.5
Lane	3.5	3.25	3.0	2.75
Shoulder	1.5	1.5	0.5	0.5
Median	3.0	1.0	-	-
Walkway	3.5	3.0	2.0	-

4.4 HEALTH AND SANITATION

4.4.1 Main Problems, Action and Goal for Health

(1) Main Problems

Based on the present condition analysis of the Health, compiled in Chapter 2, identified Main Problems is described as below.

1) Deterioration of Health Centres and its facilities

In case of a health problem, the main solutions are consultation in a Health Centre (Zone de Sante). However, strategies to resort to Zone de Health Centre for first aid can also be influenced by the availability of medical services and the assessment of the average time spent by households to reach the nearest health centers. Therefore Health Management System is an indispensable factor for Health Sector. The government policy for the development of Health Center is the main line of the strategy to reinforce the Health System.

The lack of water supply by the REGIDESO (National Water Company) system and also the poor

state of the piping networks, the majority of which have been around since the first years of independence. Covering more than 300 meters to have access to drinking water is in real trouble for water supply: 27.5% of households in the commune of N'djili are deemed to be in trouble of getting drinking water. The lack of electric connections, in some plots, is generally due to the widening of the commune and the dividing up of some plots. Given the low quality of the services provided by the SNEL (National Electricity Company) in charge of electricity, households in the commune of N'djili regularly use alternative sources of energy to carry out their house works.

2) Reinforcement of Health Management Systems

There is six Private Health Centers in Quarter-1, but no Focal Health Center. Ministry of Health cannot deliver medical services as vaccine injection, medication or health and medical promotion to Residents in Quarter-1. Health Information System (HIS) on epidemiological deceases and reproductive health is also expected.

(2) Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of in Health in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1) Action by Provincial Government

There are many indispensable tasks for Health sector by Provincial Government. Urgently following activities required by Provincial Government.

- Rehabilitation and construction of health centers
- Construction of maternal and child health care centre including surgical unit
- Establishment of health information system (HIS)
- Establishment of appropriate deployment system of doctors and nurses in N'djili health zone

2) Action by Commune

Collaboration with Provincial Government and Residents, urgently following activities are required by commune.

- Health & Sanitation education in the School

3) Action by Residents

Urgently following activities are required by residents.

- Sensitization on sanitation and hygiene issues

(3) Goals

The Goal of Health is creating Health Town with approach of Reinforcement of the Health Centre, Establishment of Health Management Systems, and Sensitization, Promotion of Health Activities for

the community.

4.4.2 Main Problems, Action and Goal for Sewerage

(1) Main Problems

Based on the present condition analysis of the Sewerage, compiled in Chapter 2, identified Main Problems is described as below.

1) No Collection and Treatment System for Sewage.

At present, there is no collection and treatment system for sewage in N'djili commune. Almost all sewage is discharged on to the ground and part of it is discharged into N'djili River or Tshangu River.

2) Toilet Facilities and Human Waste Disposal in Household

The availability of indoor toilets is very low at 61.5% in Commune of N'djili. However, from the response of household survey in N'djili commune, it is observed that there are not many concerns related to toilet facilities and human waste in household and this indicates that serious problems have not occurred due to human waste. At present, most of the toilets installed in the household are of pit latrine type. It is commonly used because of the favorable soil characteristics with high permeability in this area.

3) Lack of Public Toilets

Just a few numbers of public toilets is provided. A certain public toilet shall be planned or rehabilitated. Especially for the place which is crowded with people as Marche or traffic terminal, it shall be absolutely required.

4) Domestic Wastewater Disposal

Almost all domestic wastewater is sprinkled on the yard and the road, and part of wastewater also infiltrates into ground within a short time without causing any stagnation of water. In the household survey, the responses were also not many related to the concerns over domestic wastewater and it is presumed that serious problem has not occurred in terms of living condition.

5) Rainwater Drainage

The rainwater of N'djili commune is eliminated by street drain network, Tshangu River, N'djili River and through infiltration to ground. Drainage problems have not occurred except in the market of Q-5 and in some of the areas of Tshangu River. It is expected that the existing condition of rainwater drainage in N'djili commune including the market area of Quartier 5 will be improved by development of street drain network. The problem of rainwater drainage not only affects N'djili commune but is also related to other communes, and large-scale projects, such as river improvement, are required to solve the drainage problem of Tshangu River. Therefore, this

task is considered to be the duty of Kinshasa province instead of N'djili commune. Based on the discussions made above, it is judged that there is no urgent requirement of development project concerning sewage in N'djili commune.

(2)Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of Sewerage in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1)Action by Provincial Government, Commune

Following urgent activities required by Government, Commune

- Rehabilitation and construction of public toilet
- Formulate sanitation and hygiene management plan
- Health & Sanitation education in the School

2)Action by Residents

Following urgent activities required by Residents

- Sensitization on sanitation and hygiene issues

(3)Goals

The Goal of Sewerage is creating Health Town with approach of Establishment of Sanitary Management Systems, Instllment of Sanitation Facilities and Sensitization, Promotion of Sanitary Activities for the community.

4.4.3 Main Problems, Action and Goal for Waste Disposal

(1)Main Problems

Based on the present condition analysis of the Waste Disposal, compiled in Chapter 2, identified Main Problems is described as below.

1)No Collection Systems

Since there is no solid waste collection system for regular collection, inadequate disposal of solid waste to a vacant area is practiced. Due to the abundance for years, it has resulted into many improper open dumping sites and a lot of solid waste is accumulated in the commune. Many improper dumping sites are located in the housing area, and it has resulted adverse impacts on living environment and the social education of children.

2)Need Sensitization

Especially, some dumping sites of N'djili River Cliffside lead to solid waste flow into the N'djili River in the rainy season, and there is possibility that these dumping sites have negative impacts on the river water quality and water intake facilities in N'djili River which is the source of water works. To solve these issues and improve the above situations, it is important to consider

following key factors.

- Establishment of the periodical solid waste collection system.
- Proper disposal of the collected solid waste.
- Cleaning of the existing open dumping sites.

(2)Future Demand

Although the rate of installation of the septic tank toilet in N'djili Commune is unknown now, it is thought from the results of the field survey that it is very few. Then, the rate of installation of the septic tank toilet is assumed as shown in Table 4.4.1, and the amount of sludge generation is calculated.

Table 4.4.1 Estimation of Sludge Generation

Year	Population	Installation ratio of septic tank (Assumption)	Per capita sludge generation (lcd) ₁₎	Sludge generation (m ³ /day)	Sludge generation (m ³ /year)
2007	320,762	5 %	0.12	1.9	702
2013	358,800	20 %		8.6	3,143
2018	390,500	40 %		18.7	6,842

Note: 1) "Multi-sector Emergency Program for Reconstruction and Rehabilitation (PMURR)" 2006

(3)Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of Waste Disposal in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1)Action by Provincial Government

Actions which provincial government should take charge of in solid waste management are conveyance of collected solid waste from the transitional site to the landfill site, and proper disposal of solid waste in the landfill site. Therefore, following an action is highly expected.

- Establishment of solid waste disposal systems in the Province.

For the implementation of captioned action, establishment of solid waste conveyance system, construction of landfill site (MPASA) and its proper operation are needed, and these two are necessary conditions of the solid waste collection services to start with in N'djili.

a)Construction and operation of solid waste landfill site (MPASA)

MPASA solid waste landfill site is located in the eastern area of Kinshasa, and it is the landfill site nearest to N'djili. Construction work has already completed at the end of 2008, and it is under preparation to start operation.

b)Establishment of Conveyance System from Transitional Site in N'djili Commune to Landfill Site

Kinshasa provincial government has determined that the provincial government will take charge of the solid waste conveyance from transitional sites to the landfill site. It is necessary to decide

details related to these activities before the start of the solid waste project for N'djili.

1) Action by Commune

N'djili commune shall be responsible for the solid waste collection from each household and its conveyance to the transitional site of solid waste. Moreover, N'djili commune government needs to enforce the establishment of legal system, in order to advance with the solid waste management (solid waste development project) effectively. The following three steps are needed in this regard.

- Formulate sanitation and hygiene management plan
- Establish solid waste management system in the Commune

The outline of activities under above three items is described below.

a) Formulate sanitation and hygiene management plan

The establishment of management organization for solid waste disposal requires the following three important steps.

- Establishment of management policy and administration.
- Land acquisition and construction of transitional site.
- Establishment of solid waste collection and conveyance system

b) Establishment of management policy and administration

For the establishment of management policy and administration, Kinshasa province government has determined the plan which transfers the responsibility of solid waste collection services to a private company positively. However, considering the following viewpoints, it would be advisable to examine not only a privatization system but application of a joint public-private venture or a government corporation for appropriate level of solid waste collection services in N'djili commune.

- At present, the solid waste collection services undertaken by the private company in Kinshasa central area is not collecting the solid waste from all the households: the households in which the payment of collection charge is possible are the only ones included under its services. Establishment of management policy and administration.
- It is thought that the solid waste from households that has not received services by private company is collected by the individual solid waste transport contractor, and it is thrown away to the surrounding improper open dumping site.
- In N'djili commune, when solid waste collection is carried out under the same system, it is not certain whether the waste disposal to the existing open dumping site shall stop or not.
- Both residents and commune government should examine a system suitable for N'djili commune, and it is required for all the households to aim at establishment of the

system which can receive proper level of services.

c) Land acquisition and construction of transitional site

In case land acquisition is needed for the construction of transitional site for solid waste collection services in N'djili commune, it should be considered as an important facility. After accumulating the solid waste collected from the households at transitional site, recyclable materials are to be taken to recycle facility, and only the solid waste which needs to be disposed of, is taken to the landfill site. Since it is a central facility of solid waste collection service, immediate land acquisition is desired.

d) Establishment of solid waste collection and conveyance system

Although there is the necessity for procurement of required equipments when undertaking the solid waste collection service, required equipments vary greatly with solid waste collection systems. The solid waste collection system for N'djili commune is proposed below, and the details of required equipments are proposed in Chapter 5. Based on the existing situation of N'djili commune and residents' request obtained during field survey, a solid waste collection and conveyance system for N'djili commune is proposed. The process of solid waste collection and conveyance system is shown in Fig.4.4.1, and reasons for the proposal of this solid waste collection and conveyance system are explained below.

- At present, many households dispose of solid waste through the individual solid waste transport contractor. Therefore, the solid waste collection system collects solid waste from each household. (door-to-door collection service).
- Almost all the roads in commune are not paved, and there is the section where running of the vehicle is difficult even with a four-wheel drive car.
- Collection of solid waste is performed by classifying into two steps in consideration of the existing road situation. First-step is transportation of solid waste from household to container at the main street, and second-step is from container to transitional site.
- The first-step solid waste collection uses a tractor with trailer, and the second-step uses skip truck.
- The container at the main street is installed on the solid waste collection day, and as soon as solid waste collection is completed, it is carried to the transitional site by skip truck.

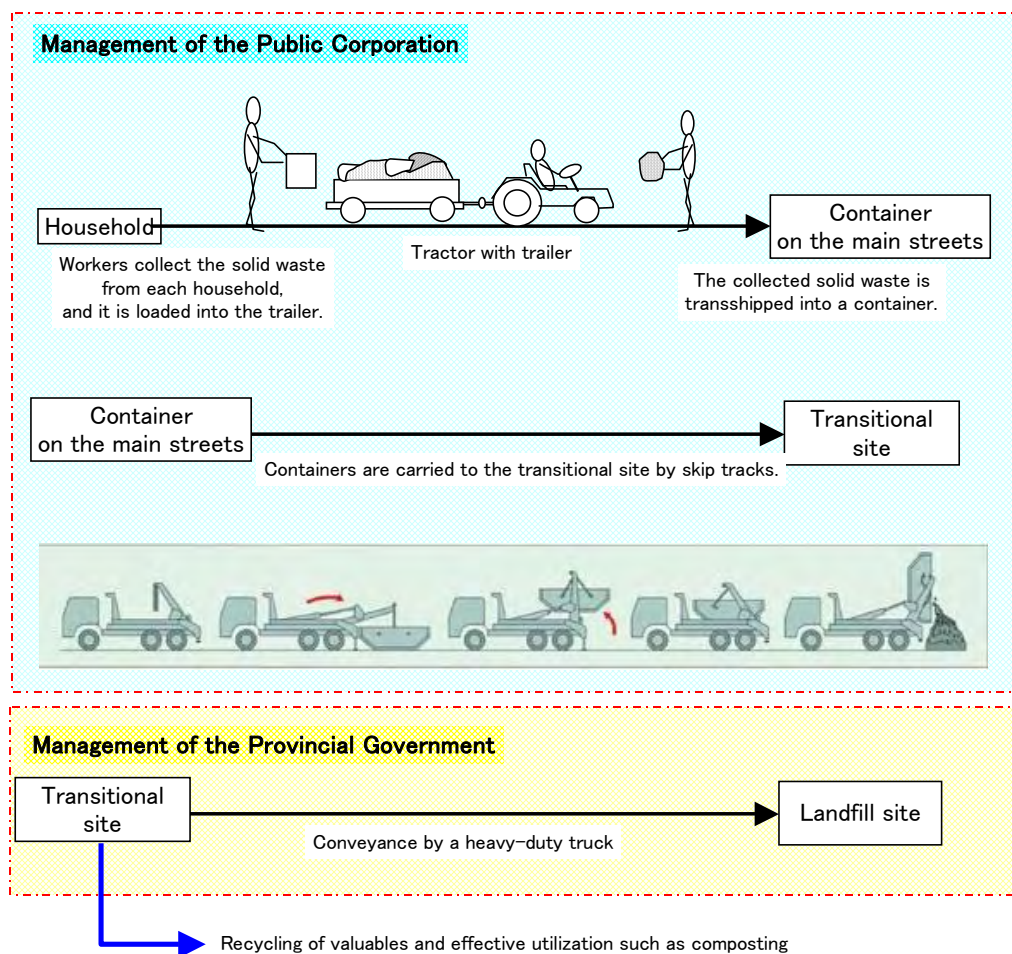


Fig. 4.4.1 Image of Solid Waste Collection and Conveyance System

e) Establish solid waste management system in the Commune

The following are main activities that should be carried out for solid waste collection and disposal in N'djili commune.

- Conveyance system from the transitional site to the landfill site by Kinshasa province government.
- Operation of the landfill site (MPASA) by Kinshasa province government
- Establishment of management organization for solid waste collection service
- Land acquisition and construction of transitional site
- Procurement of required equipments for solid waste collection service

f) Improvement of Legal System for Solid Waste Disposal

Legal System required to control illegal disposal of solid waste is enacted. The effect of solid waste collection is clarified by this legal system, and prevention of generating and expansion of the open dumping site by illegal disposal is secured by laws and regulations.

1) Action by Residents

The following activities should be carried out by residents to support solid waste management.

- Sensitization on sanitation and hygiene issues with Implementation of Solid Waste Educational Campaign and Cleaning Program for the existing open dumping sites in N'djili by residents' participation

In order to eliminate solid waste from a living environment and implementation of solid waste collection project, it cannot succeed only through the activities of the Kinshasa provincial government and N'djili commune government, but residents' full cooperation is required.

a) Implementation of Solid Waste Educational Campaign

The solid waste educational campaign can be carried out through 3R campaign. The contents of 3R Campaign are shown below.

- The following items are carried out in order to reduce plastic solid waste.
- A plastic bag is not used.
- The used plastic bag is re-used.
- The plastic solid waste is recycled as plastic raw materials.
- The organic solid waste which can be used as compost materials is collected separately, and a composting project is promoted.

b) Creation and implementation of cleaning program for the existing open dumping sites in N'djili commune by residents' participation

The cleaning program for the existing open dumping sites in N'djili commune should be carried out through residents' participation. The solid waste accumulated for years in the housing area of commune can be eliminated by this activity. Furthermore, prevention of littering of garbage should be promoted through installation of garbage cans. It is expected that realization of a comfortable living environment without solid waste can be greatly promoted through these activities.

(4) Goals

The Goal of Waste Disposal is creating Health Town with approach of Establishment of Sanitary Management Systems, Instllment of Sanitation Facilities and Sensitization, Promotion of Sanitary Activities for the community.

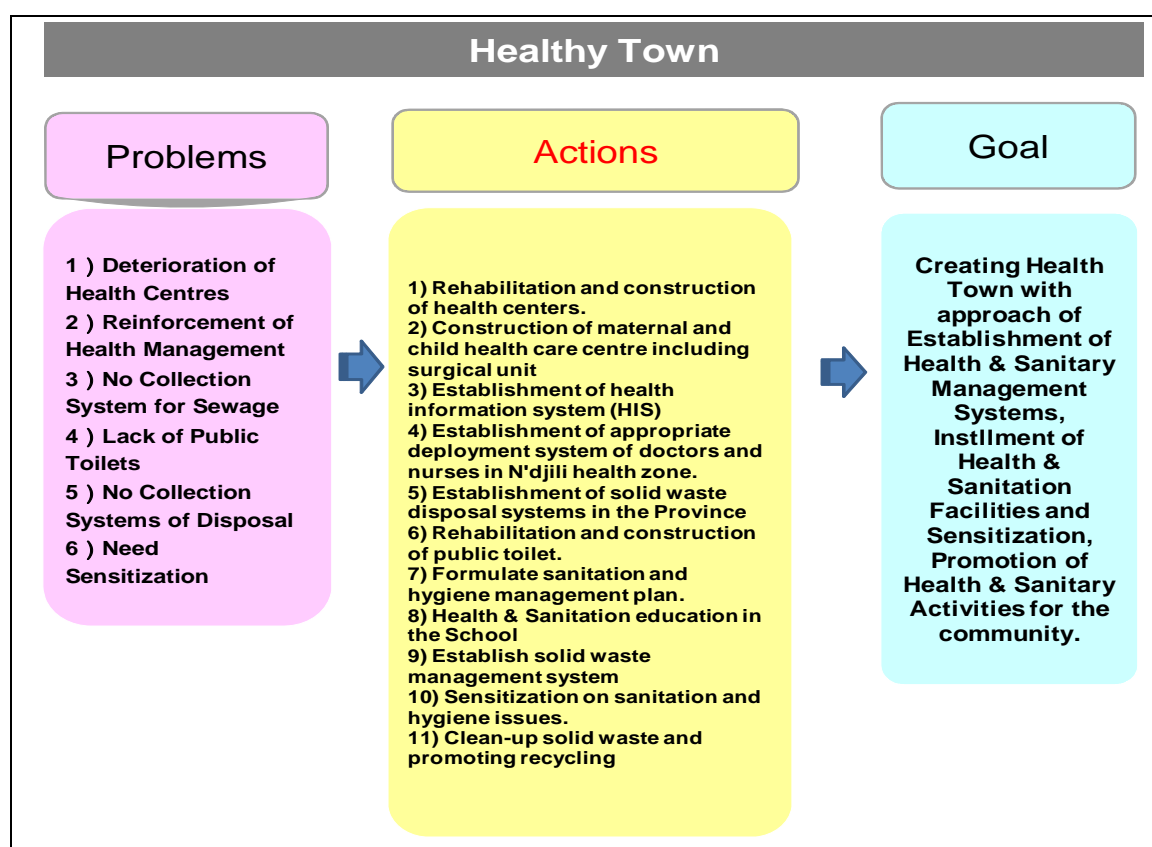


Fig. 4.4.2 Problems, Actions and Goal in Health and Sanitation

4.4.4 Integrated Development Policies for Health & Sanitation

To achieve assigned Goal, following integrated Development Policies relevant to identical actions are established as following.

Policy	Action
Rehabilitation of the Health Centres, Development of Health Centre Maintenance System (Action by Provincial Government)	<ul style="list-style-type: none"> • Rehabilitation and construction of health centers as focal points of local health services • Construction of maternal and child health care centre including surgical unit • Establishment of health information system (HIS) • Establishment of appropriate deployment system of doctors and nurses in N'djili health zone. • Establishment of solid waste disposal systems in the Province
Establishment of Health & Sanitary Management Systems , Installment of Sanitation Facilities (Action by Commune)	<ul style="list-style-type: none"> • Rehabilitation and construction of public toilet. • Formulate sanitation and hygiene management plan. • Health & Sanitation education in the School • Establish solid waste management system
Sensitization, Promotion of Health & Sanitation Activities (Action by Residents)	<ul style="list-style-type: none"> • Sensitization on sanitation and hygiene issues. • Clean-up solid waste and promoting recycling

4.5 EDUCATION AND CITIZENSHIP

4.5.1 Main Problems, Action, Goal and Development Policies for Education and Citizenship

(1) Main Problems

Based on the present condition analysis of Education and Citizenship, compiled in Chapter 2, identified Main Problems is described as below.

1) Deterioration of Education Facilities and Equipment

Recently, the Government contribution budget for Education Sector has increased by 10%. However, school facilities and equipment are quite obsolete. For instance, most of schools are founded in 1950's. There are many damaged place. Especially roof are entirely damaged and rain water drops down through small holes on the roof in classrooms. There are many classrooms without desks, benches nor blackboard. Among which, a lot of them are broken or damaged. Children are leaning lessons sitting down directly on the floor in the classrooms. Most of schools have problem of insufficient toilet. Furthermore, many schools have broken, damaged and aging fences. Presently it is dangerous in stabilization of fences and in crimes. Therefore, rehabilitation of classrooms and school facilities such as school fence, gate, water, and sanitation systems are urgently required.

2) Requirement of Civil Society Organization Supports

Engagement of civil society organisations is essential for community led development actions. Both the government and donors have limitation to support the realisation of the Action Plan. Important civil based organisation includes CLDs, NGOs and Churches which work close to the residents. Necessary capacities include planning skills, community mobilisation, monitoring and evaluation, and conflict resolutions. Essentially those who are engaged in community development works need motivate and encourage people to participate to the development activities. The JICA study involved those organisations into the community profiling survey and the test projects. Especially in the civic education under the JICA study motivated the community leaders from CLDs and enhanced their knowledge about community development. However, it is necessary for them to have further capacity of identifying people's needs, formulating community development projects and managing those projects effectively and efficiently.

3) Requirement of Attitude Change

Among youth in school age, only 1 child out of 5 children is really attending school. It has been observed the phenomena of school dropout affecting the majority of N'djili commune quarters. Regarding school dropout, in N'djili it shows present a significant correlation of 72% for both boys and girls. The most important reason is the parents' notorious inability to afford the educational costs for their children. Nevertheless, lack of education and youth delinquency are linked and a serious cause of crime and social disturbance. Therefore, civic education towards

residents requires for not only Education sector but also every sectors of commune and civil activities.

(2)Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of Education and Citizenship in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1)Action by Provincial Government

There are many indispensable tasks for Education sector by Provincial Government. For Long run, provincial government is required following a variety of challenge for educational reform.

- Developing and implementing mechanisms to replace parents' contribution to schools operational fees.
- Progressive reduction of primary school fees.
- Setting up new procedures for training teachers.
- Adoption of a strategy for vocational and technical tertiary training.
- Developing and adopting a partnership framework between the industrial sector, universities and the training centres.

However, based on critical education environment they are facing, following urgent actions, most of them are rehabilitation of school facilities, are required for Provincial Government immediately.

- Rehabilitation of security fence for primary and secondary schools
- Rehabilitation of toilet for primary and secondary schools
- Rehabilitation of classrooms
- Supply equipment for primary and secondary schools

2)Action by Commune

Administrative capacity of the commune and the quarters is significantly important to facilitate the implementation of projects listed in the Action Plan. Both individual and institutional capacity development are needed concerning planning, management, administrative skills, and securing accountability and transparency. The process of the JICA study contributed transferring knowledge and skills for participatory planning and project management to those who are engaged in the study. However, it is necessary for them to have further capacity development. Then, following an action is required for the Commune.

- Strengthening Capacity of the Commune Administration

3)Action by Residents

An awareness-raising campaign through the Civil Education done by JICA gives positive impacts for residents. Based on the precious experience, residents want expand their civic activity more broadly. Consequently, following actions are required for residents.

- Civic Education
- Non-formal education for out-of-school children
- Sports and culture promotion in the commune and schools

(3)Goals

The Goal of Education and Citizenship is “Cultivating Citizenship among N’djili residents with approaches of Rehabilitation of Schools and Improvement of those Environments, Empowerment of Civil Society Organization, by Action from Residents”.

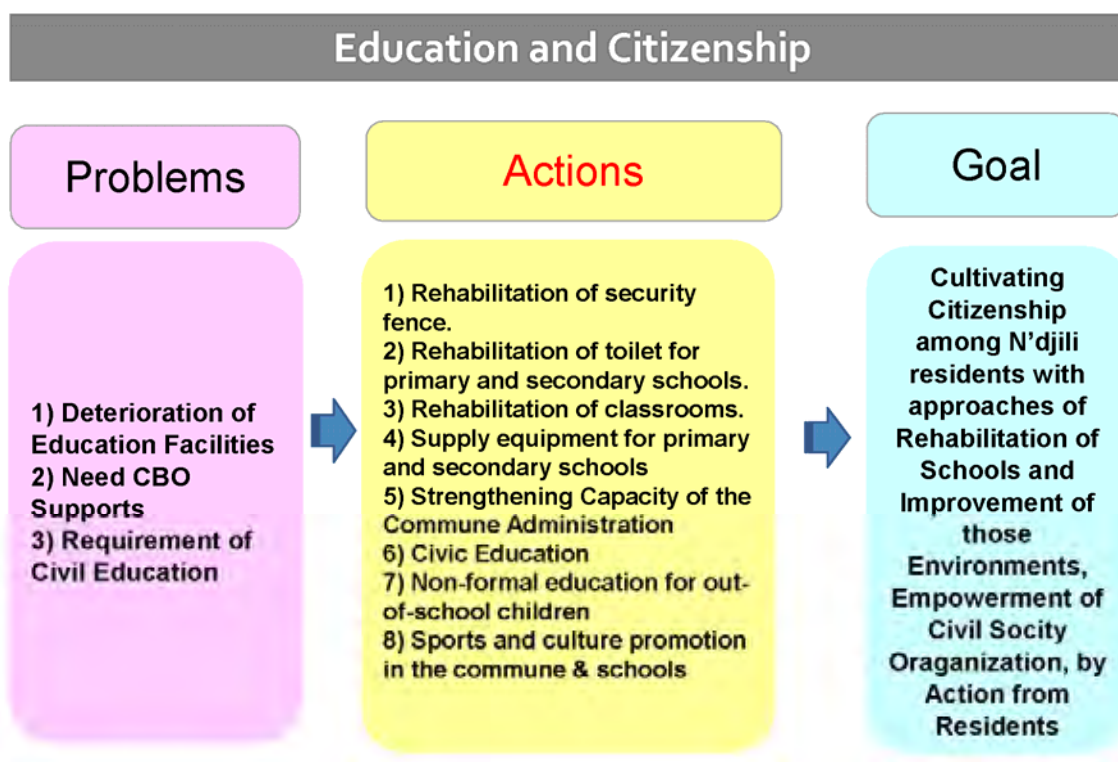


Fig. 4.5.1 Problems, Actions and Goal in Education and Citizenship

4.5.2 Development Policies

To achieve assigned Goal, following Development Policies relevant to identical actions are established as following.

Policy	Action
Rehabilitation of Schools and Improvement of those Environment, Support School Facilities and Equipments. (Action by Province)	<ul style="list-style-type: none"> • Rehabilitation of security fence. • Rehabilitation of toilet for primary and secondary schools. • Rehabilitation of classrooms. • Supply equipment for primary and secondary schools
Empowerment of Civil Society Organization (Action by Commune)	<ul style="list-style-type: none"> • Strengthening Capacity of the Commune Administration
Action from Residents/community peoples (Action by Residents)	<ul style="list-style-type: none"> • Civic Education • Non-formal education for out-of-school children • Sports and culture promotion in the commune & schools

4.6 INDUSTRY AND EMPLOYMENT

4.6.1 Main Problems, Action, Goal and Development Policies for Industry and Employment

(1) Main Problems

Based on the present condition analysis of the Industry and Employment, compiled in Chapter 2, identified Main Problems are described as below.

1) Lack of job opportunities and increasing of unemployment ratio

Lack of job opportunities and increasing unemployment ratios are a serious cause of poverty in the commune. Generating employment opportunity is the highest demand of N'djili residents.

2) Malfunction of small vendors support systems

The contribution to household income by female small vendors is significant according to the household survey and the focus group workshop. However, they are tends to vulnerable in financial capacity and in position in markets, because they have only limited power to negotiate with the market officers and wholesalers. Although there are microfinance schemes, it seems to be inappropriate for them to use it effectively.

3) Support requiring for agricultural production

There are a number of farmers in N'djili who work for vegetable gardens not only in N'djili commune but also in the SECOMAF farm and gardens in Kimbanseke commune. Those farms have a competitive advantage of production of vegetable, although farmers have problem of transportation to sell their products. Considering the rehabilitation of the SECOMOF road by BTC, the transportation problem will be mitigated. However, there is not established any action plan for employ its potentials.

4) No activation of ITI function

In Province of Kinshasa, there are four ITI schools. ITI in Gombe Commune is largest and ITI in N'djili is second scaled. The Government has a certain amount of budget for ITI, but actually approximately 65% of the budget was implemented. After graduation from ITI, majority of

student can set up self-employed shop. And some students will be employee or go to University. Some of them go to INPP to get advanced techniques. N'djili automobile industry Commune is essential and can offer many employment opportunities. But their educational equipments, material and tools are so aged used. It is necessary to deliver modern typed educational material and technical transfer and trainings to teachers as well.

(2)Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of Industry and Employment in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1)Action by Provincial Government

N'djili is famous as the town of workers, especially in mechanics for automobile repair and carpenters for coffins. Both scale and technique, they have competitive advantages with other communes. Promotion of the potential industries, especially in automobile repairing and carpentry works can contribute absorbing unemployed young peoples. Moreover, collaboration with ITI N'djili can strengthen management capacity and quality of the factories or workshops. In agriculture sector, introduction of new crops may have to be examined considering the market of Kinshasa and maybe markets in Europe. Then, following urgent actions are required for the Provincial Government.

- TOT of N'djili masters at ITI
- Rehabilitation of markets, storages
- Establish and operate farmers' market at SECOMAF

2)Action by Commune

Establishment of Industry Support Systems is proposed. Also it is necessary to establish N'djili business association which has finance functions for member companies. The commune needs to coordinate and facilitate them establishing such systems. In addition, promotion of private and private partnership, especially with private companies in industrial countries is needed for further enhancement of industry. Consequently, following an urgent is required for the Provincial Government.

- Establishment of Industry Support Systems

3)Action by Residents

Networking of small workshops and sharing facilities and tools can contribute reducing the production cost and enhancing their business promotion. Networking of those small vendors is highly important to stabilise their daily income and to prevent exploitative negotiations. The networking should include information sharing among them and establishing a safety net system and a microfinance scheme, as well. Thus, following urgent action is required for residents.

- Establish N'djili industry association
-

(3) Goal

The Goal of Industry is “Made in N’djili” through the Promotion of N’djili Industry, Improvement of Agricultural Production, and establishment of industry support systems, as well establishment of N’djili industry association.”

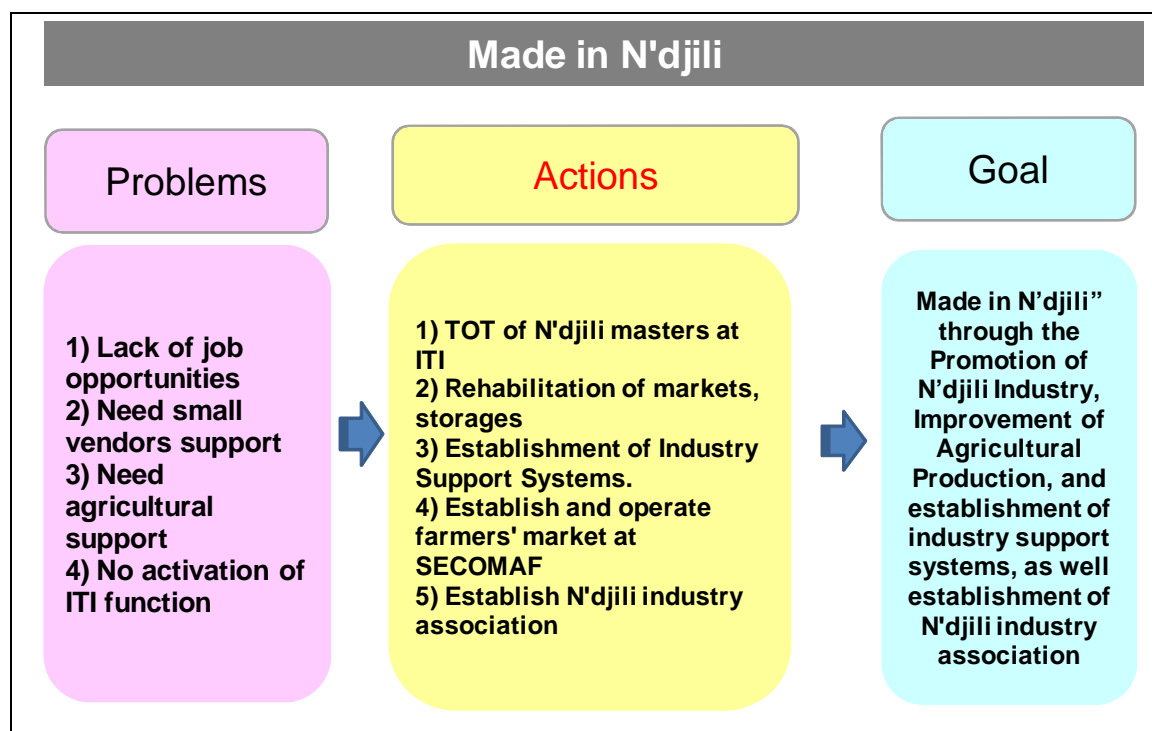


Fig. 4.6.1 Problems, Actions and Goal in Industry & Employment

(4) Development Policy for Industry & Employment

To achieve assigned Goal, following Development Policies relevant to identical actions are established as following.

Policy	Action
Promotion of N'djili Industry, (Action by Provincial Government and Commune)	<ul style="list-style-type: none"> TOT of N'djili masters at ITI Rehabilitation of markets, storages Establishment of Industry Support Systems.
Improvement of Agricultural Production (Action by Provincial Government and Commune)	<ul style="list-style-type: none"> Establish and operate farmers' market at SECOMAF
Networking of Small Vendors (Action by Residents)	<ul style="list-style-type: none"> Establish N'djili industry association

4.7 WATER AND ELECTRIC POWER SUPPLY

4.7.1 Main Problems, Action, Goal for Water Supply

(1) Main Problems

Based on the present condition analysis of the Water Supply, compiled in Chapter 2, identified Main Problems is described as below.

1) Superannuation of Facilities

Since 75% of water distribution network was built in 1950s', superannuation of distribution network is progressing. As a result of negative water pressure in pipelines due to water failure, sewage intrusion to distribution pipe may be assumed, and the safety of water supply may be at risk. For the above-mentioned reasons, the obstacle occurred in water supply services of about 36% of the connected households, such as phenomena of water failure, the shortage of water supply, and water supply stop. Additionally, a charge collection system corresponding to actual water consumption is not performed well due to either breakage of water meter or absence of water meter.

2) Insufficient Water Supply Service/Management

The improvement of water supply services is mentioned as a strong request in household survey. Ratio of household with water supply connection is 86%. From the existing conditions and problems, for lack of maintenance of water distribution network and water equipments, it became clear that deterioration of water supply services level had occurred. Therefore, achievement of "the original service level" is set as the target of the improvement project.

(2) Action by Provincial Government, Commune, Residents

To resolve above Main Problems, identical tasks of Water Supply in N'djili during the Short and Mid Term (2009-2018) stages are proposed as below.

1) Action by Provincial Government (and REGIDESO)

To achieve the target, the following two activities should be undertaken by the Provincial Government.

- Improvement of distribution network and water equipment.
- Establishment of distribution network management system

a) Improvement of distribution network and water equipment

The outline of the above-mentioned water service improvement project and roles of responsible agencies are described below.

- The project area covered by the water service improvement project is the entire area of N'djili commune.
 - The replacement of distribution network shall mainly includes the tertiary pipes (less
-

than 90 mm diameter), which is considered to have affected water supply service significantly. Furthermore, the water equipment including water meter in each household should be replaced.

- Replacement of main distribution pipe in the network shall be considered as the minimum necessary according to suggestion of REGIDESO.
- The main agency responsible for the project should not be the central government /provincial government but the REGIDESO which are water service public corporation.

b) Establishment of distribution network management system

Establishment of distribution network management system is mentioned as action of medium-to long term target. It aims at establishment of the distribution network management system including database of distribution network and investigation of water leakage so that deterioration of water supply service level by the shortage of maintenance of distribution network may not occur. The contents of this action are mainly the personnel training through technology transfer.

2) Action by Commune and Residents

Consistence with consecutive actions by REGIDESO, the residents should participate and cooperate promptly for smooth implementation of the improvement project. Furthermore, the community and residents should cope with the suspension of water supply caused by the construction works during the improvement project. The social education should be carried out as a part of this project and shall include "improvement of water supply service" and "improvement in water saving consciousness".

(3) Goal

Safe and sufficient water supply service shall be resumed through the improvement project of REGIDESO, and a comfortable living environment is expected to be established. Furthermore, the charge collection based on the actual amount of water consumption by the installed water meter shall be attained, and improvement in water-saving consciousness and an improvement of a charge collection rate are expected.

4.7.2 Main Problems, Actions, Goal for Electric Power Supply

(1) Main Problems

Based on the present condition analysis of the Electric Power Supply, compiled in Chapter 2, identified Main Problems is described as below.

1) Deterioration of Facilities

Based on the existing condition of power supply in the Democratic Republic of the Congo, the improvement of facilities, expansion of capacity and safety preservation are required for all the electric facilities such as electric generating facilities, power transmission, main distribution

network, and the electric supply facilities to each household. From the household survey, it is indicated that although 80% of households.

2) Insufficient Electric Power Service/Management

From the household survey, it is indicated that although 80% of households in N'djili commune are contracting with SNEL, sufficient electric power service is not obtained. Therefore, the problem of outbreak of fire from candle or a lamp, and the economical burden by use of high price of firewood and charcoal which replaces electric power are mentioned as a problem.

(2) Action by Provincial Government, Commune, and Residents

1) Action by Provincial Government

Concerning the improvement of electric power supply, the portion of the improvement project which the central government, Kinshasa provincial government and SNEL should be responsible is very large and important. After implementation of the measures against the basic electric power facilities by the central government, Kinshasa provincial government and SNEL, the proposal for the improvement project of N'djili commune should be considered.

2) Action by Commune and Residents

Consistence with consecutive actions by SNEL, the residents should participate and cooperate promptly for smooth implementation of the improvement project. Furthermore, the residents and community should cope with the suspension of electric power supply caused by the construction works during the improvement project. The social education should be carried out as a part of this project and shall include "improvement of electric power supply service" and "improvement in electric power saving consciousness".

(3) Goal

When prospective improvement plan by the central government, Kinshasa provincial government and SNEL are implemented, provision of safe and sufficient power supply shall be made. This will result into improved lighting and availability of reasonable thermal energy for cooking, and thereby provide a comfortable living environment for the residents.

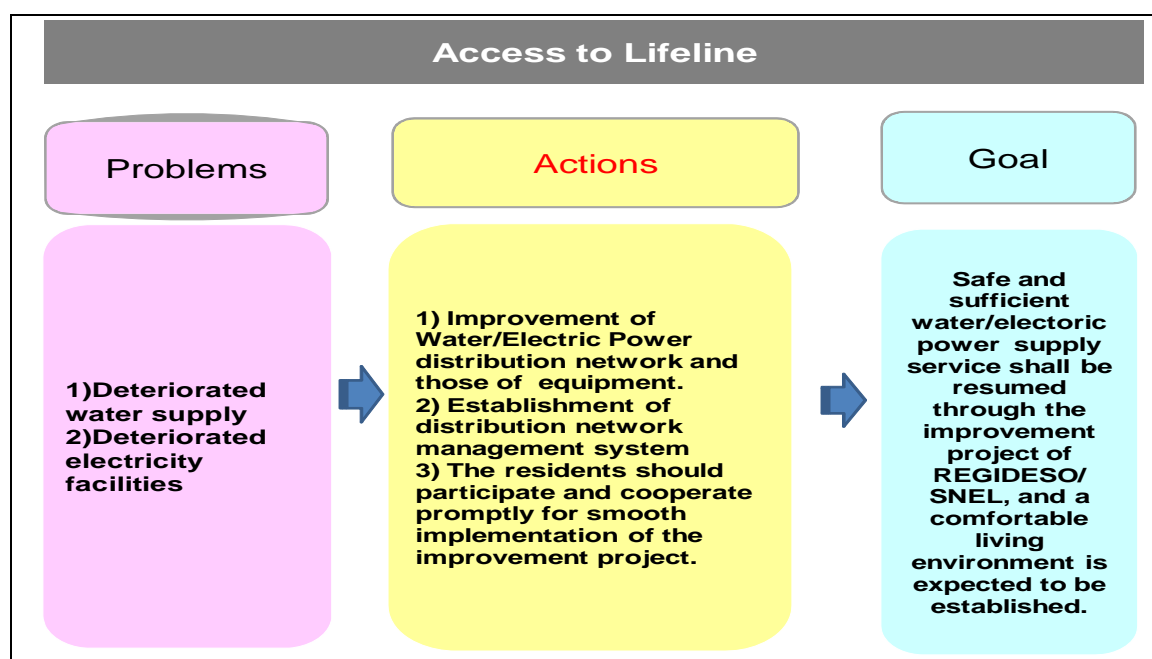


Fig. 4.7.1 Problems, Actions and Goal in Water & Electric Power Supply

4.7.3 Integrated Development Policies for Water & Electric Power Supply

To achieve assigned respective Goals, following Integrated Development Policies relevant to identical actions are established as following.

Policy	Action
Distribution Network Management (Action by Provincial Government)	<ul style="list-style-type: none"> Improvement of Water/Electric Power distribution network and water equipment. Establishment of distribution network management system
Resident cooperation in improvement works by REGIDESO, SNAIL (Action by Commune & Residents)	<ul style="list-style-type: none"> The residents should participate and cooperate promptly for smooth implementation of the improvement project. The local residents and community should cope with the suspension of water/electric power supply caused by the construction works during the improvement project. The social education should be carried out as a part of this project and shall include "improvement of water/electric power supply service" and "improvement in water/electric power saving consciousness".

CHAPTER 5

IMPLEMENTATION SCHEDULED ON ACTION PLAN

CHAPTER 5 : IMPLEMENTATION SCHEDULED ON ACTION PLAN

5.1 IMPLEMENTATION SCHEDULED ON ACTION PLAN

5.1.1 Urban Infrastructure

(1) Development Concept

Concerning Urban Infrastructure, described in Chapter 4, main problems on the Urban Infrastructure are following 5 problems.

- Lack of road rehabilitation works.
- Lack of urban spaces and infrastructure facilitate urban growth.
- Lack of road facilities can manage increasing traffic demand and ensure traffic safety.
- No proper public transport facilities, such as bus stops.
- Insufficient road network system.

To tackle with captioned problems, overall Development Concept of Urban Infrastructure is indicated as “Rehabilitate crucial urban infrastructure towards economic growth with Community Participation” for project implementations. Nevertheless, to ensure availability of proposed actions successfully, Improvement Policy of Urban Planning, described on 4.2 “ESTABLISHMENT OF IMPROVEMENT POLICY FOR URBAN PLANNING ISSUES” of Chapter 4 in this report, is indispensable to introduce planning sections of the provincial government and the commune office previously. Therefore, a necessary action for the Urban Improvement policy that has tasks of Urban Environment, Urban Planning, Legal affairs, and Implementation of Plan is expected to start immediately.

1) Development Concept of the Rehabilitation Phase (Short-term Period; 2009-2013) Project

Under the overall Development Concept, following 4 Development Concepts are set for urban infrastructure projects in the Rehabilitation Phase.

- Urgent rehabilitation of existing urban infrastructure.
- Improvement of urban infrastructure and management capacity for economic growth.
- Realization of traffic environment with safety and comfort
- Encourage community participation for infrastructure development.

Consequently, following 9 projects are proposed at the Rehabilitation Phase. The order of project is depends on project initiatives, from Provincial Government, Commune Office, to residents with time logical sequences.

- Improve Luemba Boulevard as a main street of N'djili.
- Rehabilitation of existing paved roads.
- Capacity Development for Provincial Urban Planning Sections of the Province.
- Improvement of N'djili Junction to mitigate traffic congestion.
- Installation of Sidewalk and Traffic safety facilities/Pedestrian crossings, Traffic sign, Humps, etc.
- Rehabilitation of Community Roads using LBT (Application of "Do-Nou" Technology).
- Rehabilitation of urban core zone (Q7).
- Clean-up Gutters Together with the Sanitation Brigade
- Planting flowers and tree along streets

2)Development Concept of the Development Phase (Middle-term Period; 2014-2018)

Project

Under the overall Development Concept, following 2 Development Concepts are set for urban infrastructure projects in the Rehabilitation Phase.

- Enhancement of Public Transportation.
- Improvement of living environment/conditions of the commune.

Consequently, following 3 urban Infrastructure Projects are proposed to implement at the Development Phase.

- Improvement of Tertiary Roads.
- Improvement of bus route network, bus terminal, bus stops
- Development of Community Core Zone.

3)Development Concept of the Project for the long term (after 2018)

Successively, after completion of Development Phase Projects, following an urban Infrastructure Project is expected to implement to complement.

- Development of integrated road network plan.

(2)Proposed Project

1)Rehabilitation Phase Project

Rehabilitation Phase has following 10 Urban Infrastructure Projects for implementation.

a)Rehabilitation of Luemba Boulevard

This project was completed 2010 as a Pilot Project by JICA study. Further information of the Project refers to the Chapter 4 in Main Text Report.

b)Rehabilitation of Existing Paved Roads

Project Objective:

Reduction of Traffic Congestion and Accident

Project sites:

Paved roads in Quarter 7

Outlines:

Rehabilitation of existing paved roads and proper drainage system up to existing outlet,
L=4.93km, W=7m (2lanes)

- Earth work (grading, etc.)
- Pavement work (for Carriageway: Asphalt wearing course, Base course, Sub base course, Pothole patching , Sidewalk pavement)
- Drainage work (Rehabilitation and new installation of U-shaped drain and cross culverts)
- Ancillary works (Lane marking, Humps and traffic safety measures)

Outcomes:

- Basic design and detailed design of the rehabilitation of existing paved roads
- Existing deteriorated paved roads has been paved.
- Proper drainage system has been improved up to the existing outlet.
- Installation of sidewalk, pedestrian crossing, and speed hump has been installed for the reduction of traffic accidents.

Implementation Schedule:

The Rehabilitation Phase Project (from 2011 to 2013). Basic design and detailed design: 1 year,
and Construction and supervision: 2 year

Estimated Project Costs (USD): 4,826,000.-

c)Capacity Development for Provincial Urban Planning Sections of the Province

Project Objective:

Both individual and institutional capacity of Urban Planning Sections of the Province is strengthened.

Project sites:

Urban Planning Section of Provincial Government Office,

Outlines:

- Technical Cooperation for Capacity Strengthening on Urban Planning for the Urban Planning Section.
- Through the experience of pilot projects, counterpart (official personals belongs to Urban Planning section) familiarize Urban Planning methods practically.

Implementation Schedule:

The Rehabilitation Phase Project (from 2011 to 2014).

d)Improvement of N'djili Junction to Mitigate Traffic Congestion

Project Objective:

Reduce Traffic Congestion and Accident at the N'djili Junction.

Project sites ; 1 place of Junction. 4 lanes road with right and left turn lane along Blv. Luemba,
2 lane road with right and left turn lane along SECOMAF Road.

Outlines :

- Improvement of existing T-Junction with Traffic Signals and Channelization, Lane Marking
- Installation of added lane as right turn lane and left turn lane along Blv. Lumumba. (Added lane length is approx. 100m. Added lane length will be determined by the analysis of traffic survey.)
- Installation of added lane as left turn lane and right turn lane along SECOMAF Road.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2014).

e)Installation of Sidewalk and Traffic Safety Facilities/Pedestrian Crossings, Traffic Sign, Humps, etc.

Project Objective:

Reduction of Traffic Accident

Project sites: Whole N'djili commune area

Outlines:

- Traffic safety education as a campaign for drivers, children, students and others.
- Driving manner, How to cross the road, and others

Implementation Schedule:

The Rehabilitation Phase Project (from 2013 to 2017).

f)Rehabilitation of Community Roads using LBT (Application of "Do-Nou" Technology)

Project Objective:

Foundation of grassroots actions for reducing rubbish and maintenance of gutters will be established in each quarter

Project sites:

N'djili commune whole area

Outlines:

- Dispatch "Do-nou" Technology Expert
- Training on "Do-nou" Technology method
- Selection of objective roads for rehabilitation
- Implementation of rehabilitation works

Outcomes:

- Unpaved roads have been rehabilitated by "Do-nou" Technology in N'djili Commune.
- CLD's road and tools maintenance capacity has been built and improved.
- CLDs have been equipped with working tools for road rehabilitation. Road users' traffic in N'djili Commune has been improved.
- Strengthening of maintenance capacity

Implementation Schedule:

The Rehabilitation Phase Project (from 2010 to 2018).

Estimated Project Costs (USD):

2,620,000.-for 5 years.

g) Rehabilitation of Urban Core Zone (Quarter 7 :Q7)

Project Objective:

- Innovate core zone of the commune for activation of the commune economy and city life.
- To increase Urban Functions effectively and economically, concentrates urban utilities and infrastructure to Quarter 7 (Q7)

Project sites: Quarter 7 (Q7)

Outlines:

- Rehabilitate of the commune office with surrounding public facilities including new installation of Commune Centre for resident utilization.
- As a core zone of the commune, rehabilitates/develops public space of Q7.
- Public toilet and Street-lights will be installed at open spaces.
- Selection of NGO which make management and operate the Centre.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015).

h) Clean-up Gutters Together with the Sanitation Brigade

Project Objective:

Foundation of grassroots actions for reducing rubbish and maintenance of gutters will be established in each Quarter. This project activity is closed relation with the Project of "Sensitization on sanitation and hygiene issues" in Health and Sanitation Sector. It is also recommendable for implementation simultaneously.

Project sites:

N'djili commune whole area

Outlines:

- Target streets and gutters are founded.

- Final dumping method/site(s) are identified. Illegal dumping must be prohibited. Recycling/reuse of rubbish should be recommended.
- Design detail cleaning activities and decide roles and responsibilities of CLD members and participants on the activities.
- Select the participants of the clean up activity and the training
- Training about hygiene and environmental education is conducted for the participants of cleaning up activities.
- The trained participants disseminate the hygiene and environmental education to their neighbours in street level.
- Clean up the selected streets and gutters
- Bring the collected rubbishes to final dumping site(s) or Recycling workshop(s).

Outcomes:

- A system of community based waste disposal will be established in each quarter.
- Participants will acquire knowledge about how to reduce rubbish.
- Streets and gutters will be cleaned up by the participants.

Implementation Schedule:

The Rehabilitation Phase Project (from 2009 to 2018).

Estimated Project Costs (USD):

167,000.-for 10 years.

i)Planting Flowers and Tree along Streets

Project Objective:

- Create disable urban environment through the community participation.

Project sites:

N'djili commune whole area

Outlines:

- Synchronize activity of “Clean-up Gutters Together with the Sanitation Brigade”, clean-up not only gutters, but also public spaces and pedestrian roads.
- Plant trees nad flowers along side of streets and open sapace of infntont of residents houses.

Implementation Schedule:

The Rehabilitation Phase Project (from 2011 to 2018).

2)The Development Phase Project

Development Phase has following 3 Urban Infrastructure Projects for implementation..

a)Improvement of Tertiary Roads

Project Objective:

- Improve Tertiary/Feeder roads in the commune.
- Assist the commune networks development.

Project sites:

N'djili commune whole area

Outlines:

- Road inventory Suvey of existings Tertiary/Feeder roads in the commune.
- Rehabilitation of prioritize Tertiary/Feeder roads among the Road inventory survey.
- Accomplish nessessary diversion works to access vicinity roads.

Implementation Schedule:

The Rehabilitation Phase Project (from 2014 to 2018).

b)Improvement of Bus Route Network, Bus Terminal, Bus Stops

Project Objective:

- Efficient and effective public transportation network will be developed.

Project sites:

N'djili commune whole area

Outlines:

- Review of JICA study concerning transportation network and traffic condition of N'djili.
- Decide effective and efficient bus routes considering accessibility of residents especially in uncovered areas.
- Deploy buses and drivers in appropriate locations in the commune.
- Enforce drivers to follow previously designated service routes.

Outputs:

- Improve public transport services.
- Bus routes which cover entire N'djili commune are decided.
- Bus/taxi-bus routes are followed by drivers.

Implementation Schedule: The Rehabilitation Phase Project (from 2014 to 2018).

c)Development of Community Core Zone

Project Objective:

- To stipulators community economy, create community core zone in every Quarter.

Project sites :

N'djili commune whole area

Outlines :

- Utilizing JICA study and relvant survey, finds a potintail areas/spot for community core zone in every Quarte.
- Draft land use plan for community core zone development.

- Under the land use plan, allocate appropriate space for community development with facilitation of necessary infrastructure.
- For activation of the core zone, expand community network for making use of the core zone.

Implementation Schedule: The Rehabilitation Phase Project (from 2014 to 2018).

3)The Long-Term Project (After 2018)

Accomplish upon Development Phase Projects, development plan of the long-term project has “The Development of integrated road network plan” which intends to renovate road networks in the commune for advance transport development with well linkage of long term development direction of urban planning and policies, mentioned in Chapter 4. To make road network plan in future, present traffic data, traffic volume forecasting, and various traffic survey results done by JICA study summarize as bellow sections.

(3)Future Demand

1)General of Future Demand

Future traffic volume is estimated based on the trend of current traffic volume and the growth of population and GRDP (Gross Regional Domestic Product). Traffic volume of minibus shifting from walking is added as the result of paving Croquet-Kimbanseke.

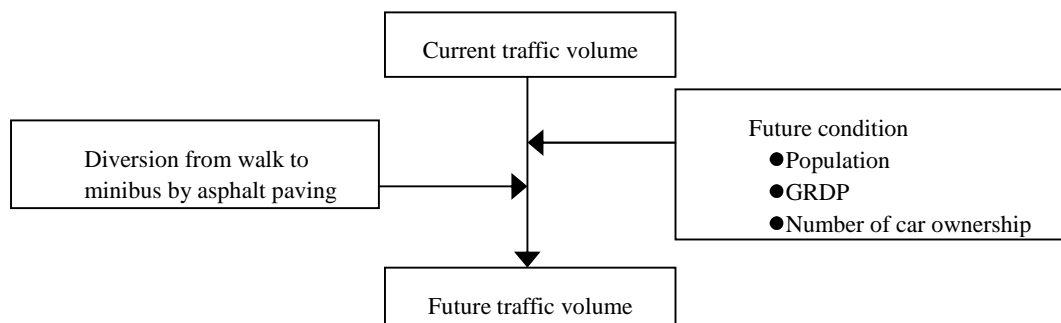


Fig. 5.1.1 Flow of Forecast of Future Demand

2)Future Traffic Volume Based on Trend

Future traffic volume based on trend is estimated by current traffic volume and the growth rate of population and GRDP (Gross Regional Domestic Product). The growth rate of GRDP (multiplying the GRDP/ capita by the population) is used as the indicator. The future traffic volume based on trend is given by multiplying current traffic volume by the indicator.

Table 5.1.1 Yearly Changes of Each Indicator

Indicator	2007	2018	Growth/year
Population in N'djili commune	320,762 (1.00)	390,448 (1.22)	1.80%
GRDP/capita	\$260 (1.00)	\$354 (1.36)	2.85%
GRDP	\$83,398,120 (1.00)	\$138,219,641 (1.66)	4.70%

Attention: Data in “()” is a data against 2007, as 1.00.

3) Diversion From walk to Minibus on Croquet-Kimbanseke by Paving

Traffic volume of pedestrians on Croquet-Kimbanseke was 13,047 person/ 12h as the result of traffic survey by The Study Team. Traffic volume of pedestrians was more than 6,000 person/ 12h on paved road excluding the Bikali Route under construction. The area around Croquet-Kimbanseke is inconvenient for use of public transportation. It is considered that people, should go to or come from other communes excluding Kimbanseke commune, ride on and off at bus stops on Route CECOMAF or 2eme Republique. Therefore pedestrians going through Croquet-Kimbanseke are on the trip of inner commune such as quarter 7 or between N'djili commune and Kimbanseke because of inconvenient public transportation. When Croquet-Kimbanseke is paved, approximately 6,000 person/ 12h will change their transfer mode from walking to minibus as a delta of unpaved road and paved. Accordingly 400 minibuses of passengers will be generated as a result of this shift from walking, given an estimate of 15.1 persons/ bus as average passengers of each bus. They will go through cross section of N'djili-Kimbanseke.

4) Balance Between Traffic Supply and Demand

The cross section on the Boulevard –N'djili counted as the heaviest traffic volume with 31,700 pcu/ 12h. 10,000 pcu/ day is used as the criterion of road lanes in an urban area in Japan. In current condition, there are 6 lanes totally (Route Cecomaf is 2 lanes, Route Bikali is 4 lanes). That is to say, the road capacity is 30,000 pcu / day. This implies that future traffic volume will not be processed by the current network. Therefore the network of N'djili commune should be enhanced with new roads or through improvement of existing roads. The former is more desirable because it also effects advancement of road density on the east side and south side of N'djili commune.

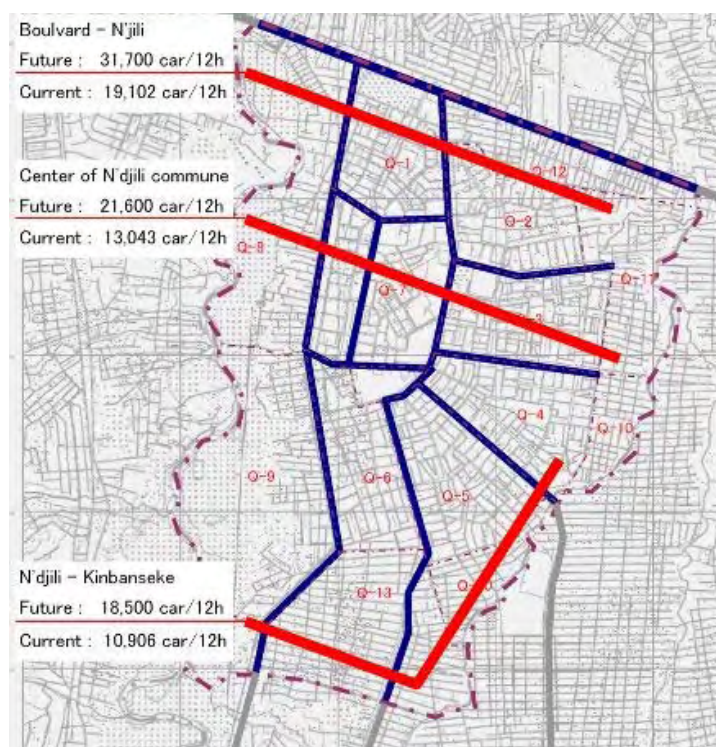


Fig. 5.1.2 Future Traffic Volume

(4) Category of Road Function

Roads of N'djili commune are categorized by their road function as below. The category is set for 5 levels, principal arterial road, arterial road, auxiliary arterial road, collector road, and local road. The cross section drawing of each level is also shown as below.

Table 5.1.2 Road Category

Road Category	Interpretation
Primary Road/National Road	<ul style="list-style-type: none"> •National basic road connecting major cities and districts in DRC •Roads connecting major urban function
Primary Road/Commune Road	<ul style="list-style-type: none"> •Roads connecting districts/communes in Kinshasa city •Local distributor connecting principal arterial roads or arterial roads to commune
Secondary Road	<ul style="list-style-type: none"> •Roads connecting Tertiary roads to arterial roads •Roads connecting commune function
Tertiary Road	<ul style="list-style-type: none"> •Access road connecting road to traffic cell
Local road	<ul style="list-style-type: none"> •Small road in traffic cell in exception to the above categories

1) Future Road Network

Future road network classified on the category of road function is shown as below. Boulevard Lumumba is only categorized as primary national road. Route CECOMAF, center road and peripheral road of quarter 7, Route Bikali, 2eme Republique and Kimbanguiste are categorized

as primary roads. Ring road of outer border of N'djili commune, complementary radial road, agricultural road along the N'djili river and access road to Kinseso commune are categorized as Secondary roads. The perspective of each road is shown next page.

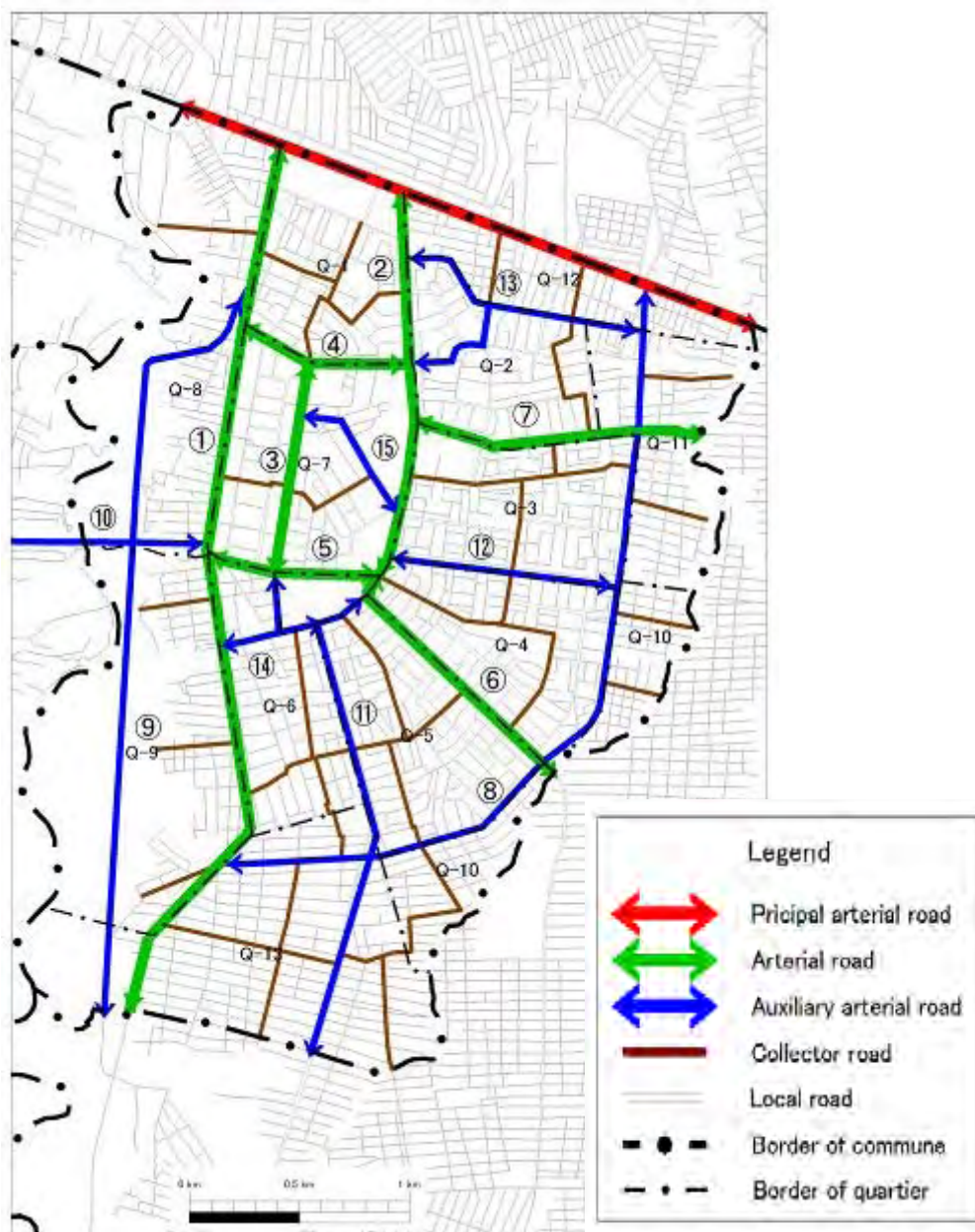


Fig. 5.1.3 Future Road Network

Table 5.1.3 Perspective of Each Road

No.	Name	Perspective
1	CECOMAF Road	<ul style="list-style-type: none"> ● Broad radial road connecting N'djili commune to Boulevard Lumumba ● Broad radial road connecting Kinshasa province to Matadi through south side of Kinshasa downtown ● Road connecting N'djili commune to Kinbanseke commune ● Road making outline of urban area of the west side
2	Bikali Road	<ul style="list-style-type: none"> ● Broad radial road connecting N'djili commune to Lumumba Boulevard. ● Road making outline of urban area of the east side
3	Luemba Boulevard	<ul style="list-style-type: none"> ● Road making main axis of urban area of N'djili commune ● Access road to such public institutions as commune office and police station located along this road for all residents of commune
4	North peripheral road of Quarter 7	<ul style="list-style-type: none"> ● Road making outline of urban area of the north side ● Access road to such public institutions as commune office and police station located along road no.3 for all residents of commune
5	South peripheral road of Quarter 7	<ul style="list-style-type: none"> ● Road making outline of urban area of the south side ● Access road to such public institution as commune office and police station located along road no.3 for all residents of commune
6	2eme Republique Road	<ul style="list-style-type: none"> ● Broad radial road connecting N'djili commune to the southwest of Kimbanseke commune
7	Kimbanguiste Commune Road	<ul style="list-style-type: none"> ● Broad radial road connecting N'djili commune to the north of Kimbanseke commune
8	Ring road	<ul style="list-style-type: none"> ● Ring road connecting each radial roads on the southeast of N'djili commune ● Road to enhance the accessibility to public transportation
9	Agricultural road on CECOMAF	<ul style="list-style-type: none"> ● Ring road connecting CECOMAF farm to Route CECOMAF for agricultural productivity growth ● Complementary road for traffic through CECOMAF road
10	Access road to Kinseso commune	<ul style="list-style-type: none"> ● Access road to Kinseso commune over the N'djili river for complementarily of Lumumba Boulevard and increase in exchange of communes
11	Maiter Croquet, Croquet-Kimbanseke Road	<ul style="list-style-type: none"> ● Road connecting the south of commune to the centre of commune for complementarily of CECOMAF Road and 2eme Republique Road ● Road to enhance the accessibility to public transportation
12	Direction for Vodacom Road.	<ul style="list-style-type: none"> ● Road connecting the east of commune to the centre of commune for complementarily of 2eme Republique Road and Kimbanguiste ● Road to enhance the accessibility to public transportation
13	Border road of Quarter 2 and 12	<ul style="list-style-type: none"> ● Road connecting the east of commune to the centre of commune for complementarily of Lumumba Boulevard and Kimbanguiste ● Road to enhance the accessibility to public transportation
14	Complementary road of south peripheral Road of Quarter 7.	<ul style="list-style-type: none"> ● Road connecting Route CECOMAF to 2eme Republique Road for complementarily of south peripheral road
15	Access road to commune office	<ul style="list-style-type: none"> ● Road connecting Route Bikali to Luemba Boulevard for complementarily of accessibility to such public institutions as commune office
16	Collector Road	<ul style="list-style-type: none"> ● Road collecting traffic from each houses and institution and connecting to principal arterial road or arterial road and auxiliary arterial road ● Road making main axis of communes ● Road for pedestrian and bicycle as main user

2)Public Transportation Network

Public transportation is enhanced with rehabilitation of existing paved road and construction of arterial road and auxiliary arterial road. Bus terminals and bus stops should be constructed with adequate bay areas having sufficient waiting space and with comprehensible guidance to ensure proper traffic movement.

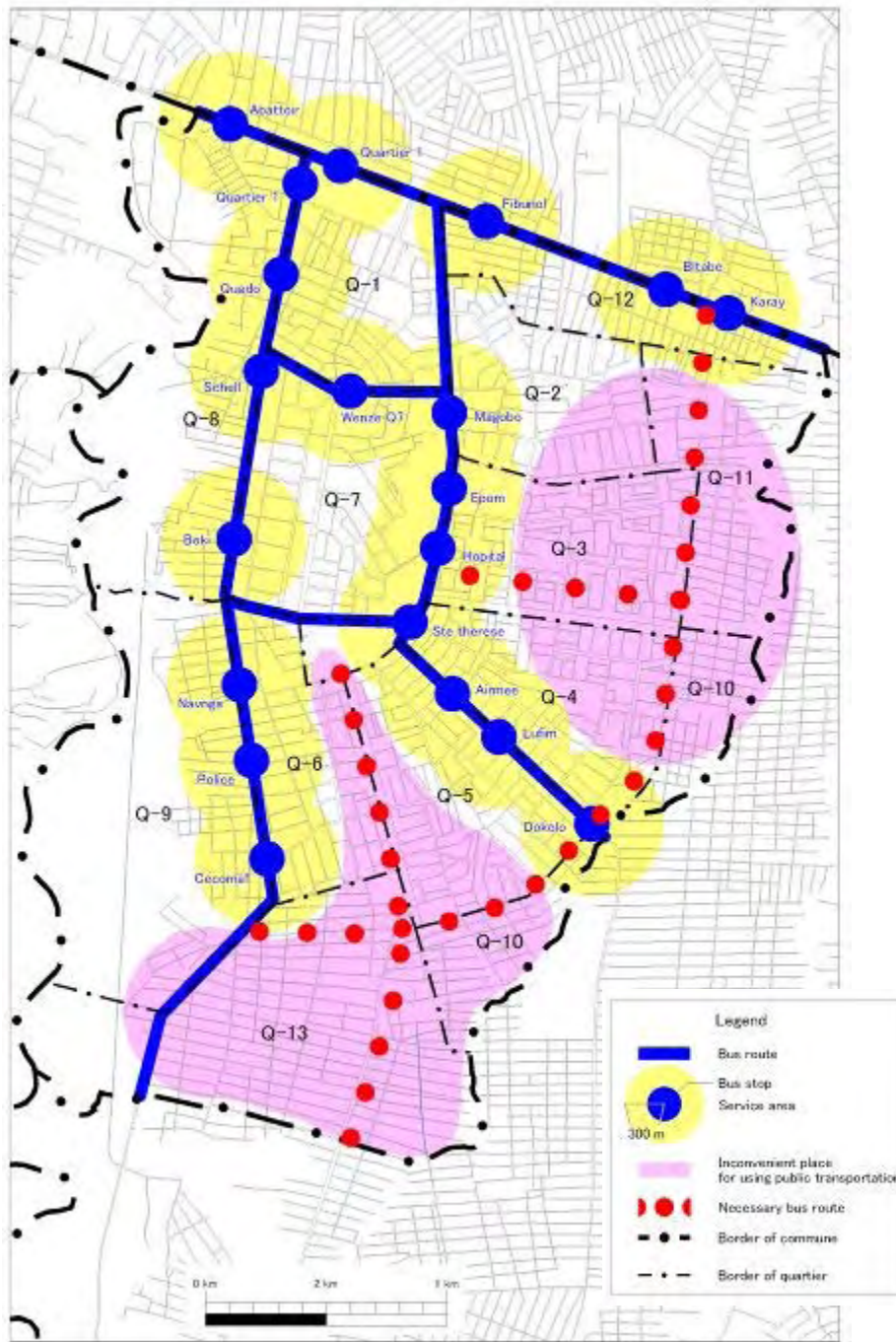


Fig. 5.1.4 Public Transportation Network

3)Creating the Space for Pedestrian and Bicycle

Collector road collects traffic from each house and institution to higher level road than collector road. Collector road is the road for pedestrians and cyclists. The stone paving is acceptable because residents living in N'djili commune are available to repair road damage by themselves as long as materials for repairing are obtained. Pedestrians and cyclists should be segregated on higher level road than collector road to ensure their safety and the space to communicate.

4)Urban Transportation Plan of Each Term

The following projects will be conducted as part of the urban transportation plan in the short term.

- Smooth long-haul traffic
 - Rehabilitation of existing paved road
 - Upgrade of N'djili intersection
 - Construction of arterial road and auxiliary arterial road
- Activation in N'djili commune
 - Construction of complementary radial road
- Enhancement of public transportation network
 - Leveraging radial road
- Advancement of accessibility to main roads and activation of N'djili commune
 - Technical transfer for constructing collector road and guidance for significance of road maintenance
 - Construction of collector road by local residents
- Realization of traffic environment with safety and comfort
 - Enhancement of traffic safety facilities with road construction
 - Elevation of ability of the organization for operation and management (with making database of road profile and maintenance plan)
 - Education of traffic safety for local residents

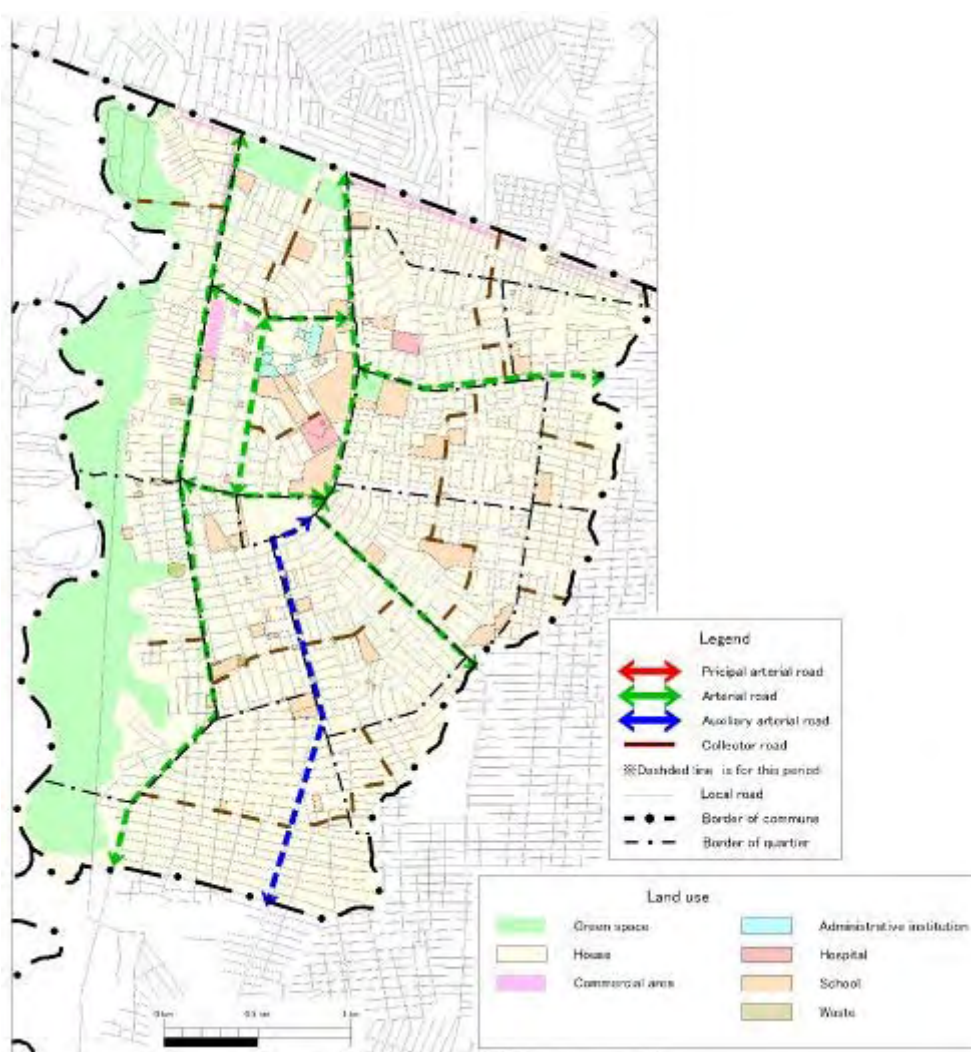


Fig. 5.1.5 Future Road Network for Short Term

Following projects will be conducted as urban transportation plan in the midterm.

- Smooth long-haul traffic
 - Construction of auxiliary arterial road
- Activation in N'djili commune
 - Construction of ring road
- Enhancement of public transportation network
 - Leveraging ring road
 - Construction of bus terminal and bus stop with road construction
- Advancement of accessibility to main roads and activation of N'djili commune
 - Construction of collector road by local residents
 - Sustainable maintenance of collector road by local residents
- Realization of traffic environment with safety and comfort
 - Education of traffic safety for local residents

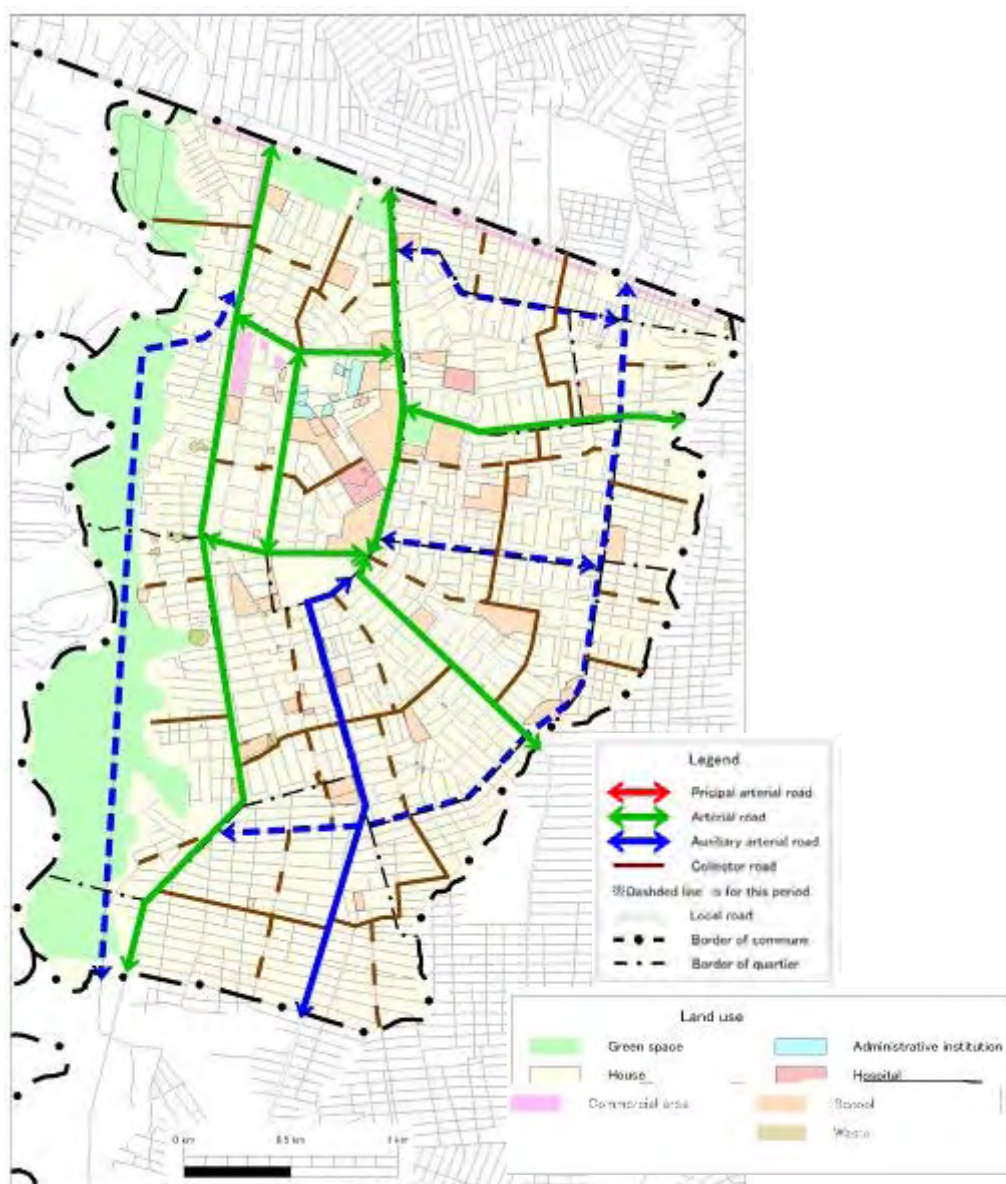


Fig.5.1.6 Future Road Network for Mid Term

Following projects will be conducted as urban transportation plan of long term.

- Activation in N'djili commune
 - Construction of access road to Kisenso commune and to center of commune
- Enhancement of public transportation
 - Restructuring public transportation network in consideration of passenger needs
- Advancement of accessibility to main roads and activation of N'djili commune
 - Sustainable maintenance of collector road by local residents

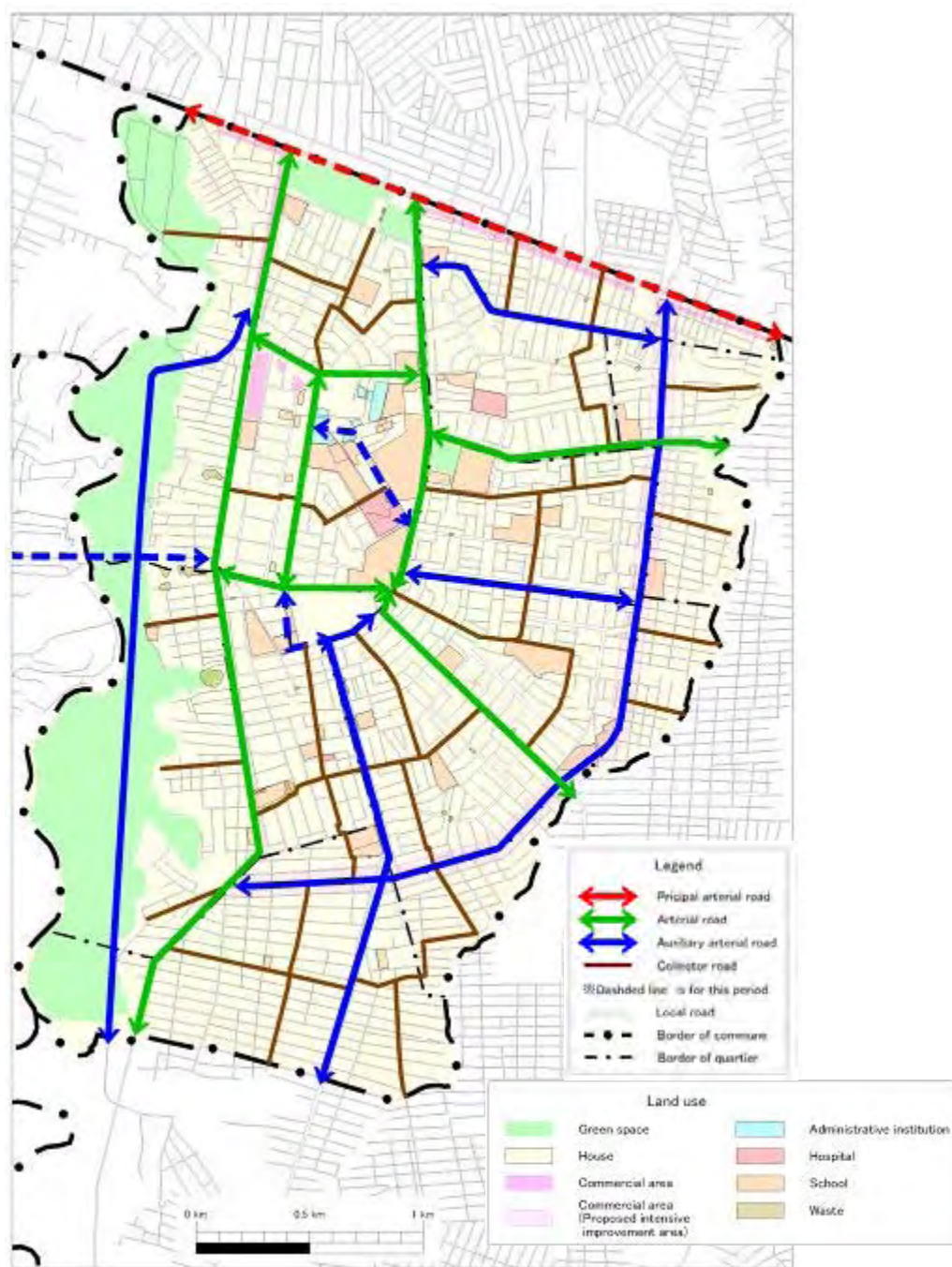


Fig. 5.1.7 Future Road Network for Long Term

(5) Maintenance Plan/Utilization Plan Including Participation of Community

Road maintenance is very important issue for the durability of roads. However, the existing road and drainage condition is so poor, because of the lacking road maintenance. The road maintenance policy should be established for sustainability. The road maintenance consists of three categories;

Table 5.1.4 Type of Maintenance

Type of Maintenance	Activity	Action
Routine Maintenance	Grading/Leveling, Pot hole patching, Cleaning of road surface(removal of soil and garbage), Cleaning of existing Open drain/gutters(glass cutting, removal of garbage), Cleaning and flushing of existing pipe and catch-pit	By Community Participation
Periodic Maintenance	Resealing/Overlay and Reconstruction, Improvement of Drainage system	By OVD
Emergency Maintenance	Urgent repair of road deterioration	By OVD

Maintenance program for routine maintenance and periodic maintenance should be established by OVD so as to effectively implement proper road maintenance. Periodic maintenance and emergency maintenance should be carried out by OVD. Routine maintenance should be carried out by the community. Maintenance committee should be established in N'djili Commune for routine maintenance by community participation. Before establishment of maintenance committee, training for the capacity building is necessary for the community. And also small maintenance equipment such as shovels, wheel barrows, tampers, etc, should be prepared in maintenance committee.

(6)Preliminary Cost Estimation

Preliminary cost estimation of improvement and rehabilitation road projects in N'djili Commune is shown in Table 5.1.5.

**Table 5.1.5 Preliminary Cost Estimation for Road Improvement and Rehabilitation
in N'djili Commune**

Project	Specifications	Road Length(km)	Total Cost(USD)
-Rehabilitation of existing paved roads	-Rehabilitation of Q7 ring road and Blv. Bangala	L=4.93km	3,778,900USD
-Upgrade of N'djili intersection	-Installation of Traffic signals and channelization	1 place	130,000USD
-Construction of arterial road and auxiliary arterial road	-		
-Construction of complementary radial road		L=3.6km	5,486,000USD
-Construction of Ring Road			
-Construction of access road to Kisenso Commune	-2lanes carriageway with sidewalks	L=3.95km	5,940,800USD
-Construction of access road to center of commune	-2lanes carriageway with sidewalks, L=100m bridge	L=1,000m	2,800,000USD
-Enhancement of public transportation network with leveraging radial road		L=800m	1,200,000USD
-Enhancement of public transportation network with leveraging ring road	-New introduction of bus routes along radial road		-
-Construction of bus terminal and bus stop with road construction	-New introduction of bus routes along ring road		-
-Restructuring public transportation network in consideration of passenger needs	-32bus stops and 1 bus terminal		1,503,200USD
-Technical transfer to constructing collector road and guidance for significance of road maintenance	-New introduction of bus routes		-
-Rehabilitation of local road by community participation	-Dispatch of expert for road maintenance programme as labour based technology		212,000USD
-Sustainable maintenance of local roads by community participation	-Rehabilitation of approx.150km local roads		
-Enhancement of traffic safety facilities with road construction	-		1,171,000USD/year
-Strengthening of related organization for operation and maintenance for road	-L=8.6km, existing paved road and radial road		47,000USD/year
-Education of traffic safety for local residents	-Dispatch of expert for operation and maintenance for road		1,970,000USD
	-Lane marking		
	-Traffic Sign		
	-Street lights		424,000USD
	-Speed Humps		
	-Technical transfer to related organization / Dispatch of experts (0.5year x 2times)		100,000USD
	-Traffic safety campaign by NGO or other organization		
Total Cost (USD)			

5.1.2 Action Plan for Urban Infrastructure

10 year Action Plan for Urban Infrastructure from 2009 to 2018 is shown in the Table below.

	Rehabilitation Phase(Short Term)					Development Phase(Middle Term)					Long Term After 2019
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Province	Rehabilitation of Luemba Blv.	Rehabilitation of existing paved roads	Capacity Development for Provincial Urban Planning Sections of the Province	Improvement of N'djili Junction to relief traffic congestion	Installation of Sidewalk and Traffic safety facilities/Pedestrian crossings, Traffic sign, Humps	Improvement of Tertiary Roads	Improvement of bus network, bus terminal, bus stops				
Commune	Rehabilitation of community roads by LBT					Rehabilitation of City Centre in Q7		Development of Community Core Zone			
CLDs & CBOs	Clean-up gutters together with the sanitation brigade					Planting flowers and tree along streets					
Policy	Establish adequate road and drainage maintenance system by community participation					Enhance equal accessibility and promote public transport					Establish adequate road network system with accessibility
	Ensure the sustainable urban growth with strong and stable economy					Satisfy increasing traffic demand and ensure traffic safety and security					

Fig. 5.1.8 Action Plan for Urban Infrastructure

5.2 HEALTH AND SANITATION

The Health and Sanitation sector is described dividing into health, sewerage and waste disposal subsectors in this section.

5.2.1 Health

(1) Development Concept

Lack of medical institutions and poor services give negative affection of the commune. To deal with appropriate health services over the commune, establishment of effective Health Centre Management Systems and renovation of that facility is quite significant for the sector. For instance, the average number of delivery is 21case /1,000 residents. Some season maternity facility is fully occupied. Obviously, the capacity of facility and medical equipment are

insufficient. Therefore, urgent rehabilitation of the Health Centres which can give quick impacts on the medical service is a basic Development Concept for the Health.

1) Development Concept of the Rehabilitation Phase (Short-term Period; 2009-2013) Project

One of the crucial problems of health is a deterioration of Health Centres and those facilities. As well malfunction of medical services and management systems are also required to improve immediately. The government policy for the development of Health System is the top priority of the Health sector. However, relevant facilities are obsolete with poor conditions. Some Health Centre has insufficient number of beds for maternity and medical equipment. In case of Quarter 1, there is six Private Health Centres in the Quarter, but not exists Focal Health Centre. For the reason, Ministry of Health cannot deliver medical services as vaccine injection, medication or health and medical promotion to residents in Quarter 1.

Furthermore, infection diseases such as malaria and typhoid as well as diarrhoea are common in N'djili. These diseases can be preventable through hygiene trainings and health advocacy. There are efforts on preventive health activities by health centres in each quarter with financial support by donors such as UNICEF. Further health promotion is needed in community level to expand knowledge and behaviour of preventive health among the population. It may have to be considered the training of some of residents in street level as community health promoters in hygiene, family planning and sexual transmitted diseases (STDs) such as HIV.

In Health sector, following 4 actions are recommended to execute urgently in Chapter 4.

- Rehabilitation and construction of health centers.
- Construction of maternal and child health care centre including surgical unit
- Establishment of health information system (HIS) on epidemiological diseases and reproductive health
- Health & Sanitation education in Schools and Streets

2) Development Concept of the Development Phase (Medium-Term Period; 2014-2018) Projects

Without a successive project since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

(2) Proposed Project

Target for the Rehabilitation of Health and Medical facilities are shown as following:

1) Rehabilitation Phase Project

Rehabilitation Phase has following 4 Health Project for implementation.

a) Rehabilitation and Construction of Health Centers

Project Objective:

- At Present, Focal Health Centre in Q1 where focal health centre doesn't exist. After completion of the Project, people in every health zone can obtain health-care service evenly.
- Rehabilitate the other Health Centre to maintain necessary medical services for all.

Project sites:

Quater-1 and the other Quater in the N'djili

Outlines:

- Necessary Survey (Feasibility Study, Basic Design, Detailed Design).
- Construction and Supervision.
- Supply of equipment.
- Rehabilitation and Maintenance of existing Health Centres in Quarter 2 to 13.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015).

Estimated Project Costs (USD):

US\$901,000 for Q1 Health Centre Construction cost

b)Construction of Maternal and Child Health Care Centre including Surgical Unit

Project Objective:

- To establish an adapted capacity of facilities and equipments.
- To reduce infant and maternity mortality.

Project sites:

Quarter-2,3,5,7,13A

Outlines:

- Necessary Survey (Feasibility Study, Basic Design, Detailed Design).
- Construction and Supervision.
- Supply of equipment.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015).

Estimated Project Costs (USD):

US\$2,844,000 for all project cost (5 facilities). Land acquisition and house relocation costs are excluded.

c)Establishment of health information system (HIS) on epidemiological deceases and reproductive health

Project Objective:

- To reduce epidemiological deceases.
- Through the medical data collection/analysis, preventive health care policy prevailed

among the commune.

Project sites:

N'djili commune (Dose not decided specific site)

Outlines:

- Necessary Survey (Feasibility Study, Basic Design, Detailed Design).
- Construction and Supervision.
- Supply of equipment.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015).

d)Health & Sanitation Education in Schools and Streets

Project Objective:

Students/Residents will make aware the issues of preventive health by the trained community health promoter

Project sites: N'djili commune whole area

Outlines:

- School teachers/community health promoters are trained in the field of preventive health.
- The trained school teachers/community health promoters share the ideas of preventive health which they learned with their neighbours in their streets.

Activities:

- School teachers/community health promoters are trained about preventive health including the issues of infection diseases and STDs using the existing texts.
- Trained School teachers/community health promoters disseminate the issues to their students/neighbours in their streets.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2018).

5.2.2 Sewerage

(1)Development Concept

As pointed out Development Policies for Health and Sanitation in the Chapter 4, such as 1) Establishment of Health & Sanitary Management Systems, 2) Installment of Sanitation Facilities, and 3) Sensitization, Promotion of Health & Sanitation Activities are recommended for doing actions. To achieve captioned Development Policies, following development concepts of Sewerage can design for specific project promotions and implementations.

1)Development Concept of the Rehabilitation Phase (Short-term Period: 2009-2013) Project

First, Most of households in N'djili commune have a toilet and the pit latrine has been adopted as the toilet of choice. Furthermore, the water service diffusion rate of N'djili commune is high (most of drinking and domestic water are obtained from tap water) while the geographical feature and soil conditions are suitable for the pit latrine toilet. It was judged from a viewpoint of a living environment that there is no urgency. In the present condition, wastewater does not overflow on roads or vacant areas; it is thought that wastewater disposal is performed by infiltration. Similarly, it was judged in consideration of the living environment that are relatively affordable than neighbouring communes. Although it is reported that slight floods are generated by rainwater drainage in the Quartier 5 Market, it is possible that the drainage problem could be improved by the individual countermeasures. Furthermore, the roadside ditch built in the road improvement program would contribute to the improvement of rainwater drainage.

However, shortage of public toilets, such as Markets, bus terminals, parks and other public utility spaces/areas are extremely serious condition. To keep the commune environment clean, provision of sanitary facility is an indispensable approach requiring urgently. Lack of public toilets in the commune causes unsafe environment and exposes residents to diseases. Sewerage abandoned on the ground drain and contaminate streets, avenues, and family plots up to N'djili River upstream of Regimes Water Capture and water Treatment Plant on N'djili River exposing the residents not only N'djili people, but also Kinshasa population to various water diseases, cholera, chronic diarrhea, dysenteries, intestinal worms, etc. Therefore, following a project is proposed at the Rehabilitation Phase.

- Rehabilitation and Construction of Public Toilet

2)Development Concept of the Development Phase (Medium-Term Period: 2014-2018) Projects

Without a successive project since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

3)Development Concept of the Long-Term Period Project (after 2018)

Kinshasa province government recommends septic tanks with leaching pit toilets with the target of improvement of health and living environment. Since toilets are principally domestic facilities in the private ownership of households, their improvement should be undertaken privately by each household. Furthermore, public toilets should be allocated to facilities such as schools, hospitals, and markets. Increase of the amount of septic tank sludge is expected with progress of toilet facilities improvement. Unsuitable treatment and disposal of the generated septic tank sludge has a possibility of becoming the cause of new health problems, or

environmental pollution and deterioration. Therefore, construction of suitable septic tank sludge treatment disposal and establishment of collection and conveyance system of septic tank sludge is required.

At present, the Kinshasa province government has construction plans for a sludge treatment plant in the solid waste landfill site. The collection and conveyance system for septic tank sludge need to be built for N'djili commune. As such, the following items are established as targets of the medium term plan.

- Establishment of collection and the conveyance system of septic tank sludge.
- A solid waste public corporation performs collection / conveyance service of septic tank sludge.
- Development of regulation system in connection with sludge.
- An educational activity and campaign aiming at the improvement in enlightenment / consciousness in connection with health.

(2)Proposed Project

1)Rehabilitation Phase Project

Rehabilitation Phase has a following Sewerage Project for implementation.

a)Rehabilitation and Construction of Public Toilet

Project Objective; Hygiene for good health conditions, Healthiness, prevention of diseases.

Project sites ; Six sites among which 4 marketplaces and 2 public squares in N'djili Commune (Quarter 7, Q 6 Q5, Q2 Marketplaces, Sainte Thérèse and Dokolo Squares).

Outlines ; Construction of public toilets in durable materials in 6 selected sites thus solving the problem of human excreta or faeces on the streets, avenues. Public toilets jointly should be run by the CLDs, NGO and the Commune provide the management of the generated income to ensure regular maintenance and operations. This is the main difference in the management procedure of public toilets constructed compared to the public toilets at the main entrance of N'djili Commune that were run by the Provincial Government, not involving the local community (CLD) or the commune office. These toilets are a model for other quarters and communes.

Project Outcomes:

- 6 public toilets are constructed in durable materials
- Residents use them upon paying 100FC to ensure maintenance.
- Near the toilets, swerage are no longer on the streets and family plots.
- They are no more drained towards N'djili River without infiltration.
- Direct vital environment is cleaned
- Residents'health conditions are improved.

- Residents thus learn how to ensure health conditions by keeping their environment safe and healthy
- Environment pollution has very much decreased.
- N'djili river water is free from human excreta that are daily drained to REGIDESO Water Capture Centre and Water Treatment Plant on N'djili River.

Implementation Schedule: The implementation schedule covers 3 months. It will be developed more explicitly as soon as the budget is allocated and funds rise.

(3) Estimated Project Costs (USD): US\$99,198.

1) Long-Term Period Project

In the future, increase of the amount of septic tank sludge is expected with toilet facilities improvement from Leaching pit to septic tank toilet in N'djili commune. Based on this assumption, component of Medium-term project is equipment assistance for the collection of septic tank sludge and conveyance to the sludge treatment plant. The list of required equipment is shown in Table 5.2.1.

Table 5.2.1 Project Component for Sludge Disposal of Septic Tank

Section	Items	Specifications
Equipment Assistance	Collection of sludge	- UN Vacuum (micro-exhauster with vacuum tank and motor pump)
	Collection/ transportation of sludge	- Suction truck

The number required of the above-mentioned equipment is determined as follows.

- When an access road is narrow, septic tank sludge is collected by the former equipment (UN Vacuum), and it transships sludge into the suction truck. If there is sufficient road width, it is collected directly with the suction truck. A UN Vacuum and a suction truck are one set in all.
- Tank capacity of a suction truck is 5 m³. It is 2 times per day of the conveyance to treatment plant, and five-day operation per week.
- The calculation conditions of the required number of equipment are considered as collection conveyance of the amount of generating sludge.
- The required number includes a 10% margin of allowance.
- The calculation result is shown in Table 5.2.2.

Table 5.2.2 The Quantity of Sludge Collection Equipment Required

Sludge generation (m ³ /day)	Sludge generation (m ³ /week)	Loading Capacity of a Vehicle (m ³ /week)	Required number of vehicle with 10% of additional coverage	Actual required number of vehicles
18.7	131.2	50 (5 m ³ x 5 days x 2 cycles)	2.9 Vacuum cars and Vacutug	3 sets Vacuum cars and Vacutug

2) Preliminary Cost Estimation

Preliminary cost estimation of the sludge disposal of septic tank project is shown in Table 5.2.3.

Table 5.2.3 Preliminary Cost Estimation for Sludge Disposal of Septic Tank

Specifications	Quantity	Unit Price	Total Cost
- UN Vacutug (micro-exhauster with vacuum tank and motor pump):	3	6,500	19,500
- Suction truck (5 m ³)	3	282,000	846,000
Total Cost (US\$)	-	-	865,500

5.2.3 WASTE DISPOSAL

(1) Development Concept

To achieve Goal for Health and Sanitation, following development concepts of Waste Disposal can design for project formulation and implementations.

1) Development Concept of the Rehabilitation Phase (Short-term Period; 2009-2013) Project

Urgent problems regarding the solid waste of N'djili commune are shown below.

- Periodical solid waste collection is not performed.
- Solid waste is dumped into the open dumpsites in N'djili commune.
- Solid waste has continued being abandoned for years and deposited on many places in commune.

In order to solve this problem, it is desirable to start the conveyance to garbage collection and a landfill site immediately. However, the actual condition is that the commune government has no organization, no capability and no fund for implementation of this action immediately. The Kinshasa province government recommends that private corporations or public corporations perform solid waste collection and disposal. As mentioned above in Chapter 3, one company has already performed solid waste collection and disposal in the Kinshasa province.

Also in N'djili commune, it is thought desirable to establish a public corporation or a private company to perform solid waste collection and conveyance. However, it is expected that it is

not easy to actually establish a public corporation or a private company in charge of solid waste collection and conveyance system, and to perform suitable management. In these backgrounds, the following projects are proposed for Rehabilitation Phase targets.

- Establishment of solid waste disposal systems in the Province
- Formulate sanitation and hygiene management plan
- Establish solid waste management system in the Commune
- Sensitization on sanitation and hygiene issues
- Clean-up solid waste and promoting recycling

2)Development Concept of the Medium-term Project

Without successive projects since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

3)Development Concept of the Long-term Project

The following items are mentioned as the long-term project target for advancement of solid waste collection and disposal, and it proposes carrying out these items as a technical assistance project.

- Implementation of separated collection, and promotion of effective utilization and recycling of solid waste.
- Establishment of the regulation and penalty system in connection with solid waste.

(2)Future Demand

The amount of solid waste generation of N'djili Commune is shown in Table 5.2.4.

Table 5.2.4 Solid Waste Generation in N'djili Commune

Year	Population	Per capita solid waste generation (lcd) ¹⁾	Per capita solid waste generation (kgcd) ¹⁾	Ratio of Commercial /Institutional /Industrial ²⁾	Solid Waste generation (m ³ /day)	Solid waste generation (ton/day)
2007	320,762	1.214	0.422	5%	397	138
2013	358,800	1.286	0.458	7%	489	174
2018	390,500	1.352	0.482	10%	581	207

Note 1) "Multisector Emergency Program for Reconstruction and Rehabilitation (PMURR) " 2006

2) The rate of solid waste from commercial, institutional and industrial activities was assumed to be 10% in 2018.

(3)Proposed Project

1)The Rehabilitation Phase Project

Rehabilitation Phase has following 6 Waste Disposal Projects for implementation. "Health & Sanitation education in the School" Project please refer to the Rehabilitation Phase Project of Health.

a) Establishment of Solid Waste Disposal Systems in the Province

Background:

To solve soiled waste issues, this project is formulated as technical assistance project for solid waste management, the organization which manages solid waste collection and disposal is established. It is judged that implementation stage of solid waste collection service has been prepared through educational campaign to residents and technical consideration of solid waste collection method. If equipments required for solid waste collection and conveyance can be obtained, solid waste collection and disposal can be started.

Project Objective:

Implementation of solid waste collection and disposal service

Project sites:

N'djili commune whole area.

Outlines:

This project is an equipment procurement project for solid waste collection and conveyance. Component of the equipment procurement project aiming at the solid waste collection and conveyance is shown in Table 5.2.5.

Table 5.2.5 Project Component for Solid Waste Management

Section	Items	Specifications	Quantity
Procurement of equipment	Solid waste collection and conveyance	- Tractors and trailers	16
		- Skip trucks (10 m ³)	13
- Local produced skip-containers (10 m ³)		104	
- Hand tools		1 set	
	Transitional site	- Bull-dozer	1

Quantity calculation of equipments is assumed as follows.

- Scope of service activities of the public corporation / private company is considered as collection and conveyance to transitional site.
- Collection workers collect solid waste from every household, and the collected solid waste is carried to the container put on main roads by tractor. The solid waste in the container is carried to a transitional site by Skip trucks.

The number of tractors was calculated as follows.

Assumed number of collection site (household):	17,000
Assumed interval for every household:	15 m (since a house is in both sides, it may be 7.5m/household)
Assumed distance of collection work:	4 times of interval distance (50 m/household = 12.5 m/hh x 4)
Assumed tractors speed:	3 km/hr.
Solid waste collection frequency:	2 times /week (6 operation days/week)

	Daily operation area is 1/3 area of commune
Operation hour of collection:	4 hours
Additional coverage:	10%

Required Number of tractors

$$= (17,000 \text{ hh} \times 7.5 \text{ m/hh} \times 4 \text{ times} / 1,000 \text{ m/km}) / 3 \text{ km/hr.} \times 4 \text{ hr.} / 3 \text{ area} \times (100\% + 10\%)$$
$$= 16$$

The number of containers was calculated as follows.

Assumed daily amount of collected solid waste:	1/6 of total weekly amount
Capacity of container	10 m ³
Additional coverage:	10%

Required Number of containers

$$= (581 \text{ m}^3/\text{day} \times 7 \text{ days/week}) / 6 \text{ days} / 10 \text{ m}^3/\text{container} \times (100\% + 10\%)$$
$$= 104$$

The number of skip trucks was calculated as follows.

Solid waste conveyance frequency:	6 times /day (6 operation days/week)
Assumed daily amount of collected solid waste:	1/6 of total weekly amount
Additional coverage:	10%

Required Number of trucks

$$= (581 \text{ m}^3/\text{day} \times 7 \text{ days/week}) / 6 \text{ days} / 10 \text{ m}^3/\text{container} / 6 \text{ times/day} \times (100\% + 10\%)$$
$$= 13$$

Project Outcomes:

- Dust spreaded over the the commune have dramaticaly decreased.
- N'djili river water front, now spoiled by garbage, bacames clean.

Implementation Schedule: The Rehabilitation Phase Project (from 2011 to 2015).

b) Formulate Sanitation and Hygiene Management Plan (Technical Assistance Project for Solid Waste Management)

Background:

There is no public and periodical solid waste collection/disposal service. Therefore, a large part of solid waste is thrown away to open dumpsites in N'djili commune. It should be formulated as a technical assistance project required in order establishing a solid waste collection and disposal system in N'djili commune. The expert of three fields (economics /financial affairs, solid waste disposal management and educational campaign) is required for this technical assistance project. Component of the technical assistance project aiming at solid waste disposal management is

shown in Table 5.2.6.

**Table 5.2.6 Technical Assistance Project Aiming at Solid Waste Disposal
Management**

Section	Items	Specifications
Technical assistance	Establishment of public corporation /private company	- Establishment of public corporation /private company (or preparation of establishment) - Establishment of management system
	Establishment of management for solid waste disposal	- Existing condition survey - Selection and acquisition of transitional site - Establishment of solid waste collection system - Establishment of solid waste conveyance system
	Educational campaign	- Existing condition survey - Creation of educational campaign program - Implementation of pilot project - Creation of cleaning program of open dumpsites by residents' participation

Project Objective:

Establishment of organization and a sustainable management system for solid waste.

Project sites:

N'djili commune whole area.

Outlines:

Detail Project description is as following.

Project Outcomes:

- Solid Waste Management Systems established in the commune.
- Residents' health conditions have been improved.

Project Cost:

Table 5.2.7 Preliminary Cost Estimation for Solid Waste Management

Specifications	Quantity	Unit Price	Total Cost
Personnel cost			
<Establishment of public corporation /private company>	2	28,000	56,000
- Establishment of public corporation /private company (or preparation of establishment)	2	28,000	56,000
- Establishment of management system			
<Establishment of management for solid waste disposal>			
- Existing condition survey	1	28,000	28,000
- Selection and acquisition of transitional site	1	28,000	28,000
- Establishment of solid waste collection system	2	28,000	56,000
- Establishment of solid waste conveyance system	1	28,000	28,000
<Educational campaign>			
- Existing condition survey	1	28,000	28,000
- Creation of educational campaign program	1	28,000	28,000
- Implementation of pilot project	1	28,000	28,000
- Creation of cleaning program of open dumpsites	1	28,000	28,000
Transportation cost	6	11,000	66,000
Total Cost (US\$)	-	-	430,000

Implementation Schedule: The Rehabilitation Phase Project (from 2012 to 2015).

c) Establish Solid Waste Management System in the Commune

Project Objective:

Establishment of organization and a sustainable management system for solid waste.

Project sites:

N'djili commune whole area.

Outlines:

The Project is planned in the urgent project by the following policy and condition, and this Project carried out after solid waste collection service is started.

- This program is cleaning of the open dumpsite by residents.
- It sets up carrying out on Sunday in consideration of residents' participation.

This project assumed that as conveyance and disposal of the collected solid waste are done by the solid waste public corporation.

Project Outcomes:

- Facilitate Solid Waste Management activities of Commune.

- Encourage resident participation for clean.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015).

d) Sensitization on Sanitation and Hygiene Issues

Project Objective; The population change their attitude and behaviour on the issues of sanitation and hygiene through continuous sensitisation activities.

Project sites:

N'djili commune whole area.

Outlines:

Detail Project activities are as following.

- Necessary modules of sanitation and hygiene issues are updated.
- The commune administration organises trainings such as hygienic behaviour, utilisation of improved sanitation facilities using the CLD trainers who are trained during the JICA clean-up campaign.
- Model schools are selected.
- Improved sanitation facilities such as toilet are installed at the model schools.
- The CLD trainers sensitise students at the model schools about not only theoretical hygiene and sanitation issues but also in practice by using the improved sanitation facilities.
- Students conduct daily clean up activities at the model schools.
- The lessons learned at the model schools share with other schools in N'djili.
- Toilet and drainage at the markets are rehabilitated.
- The users clean up market places, especially toilet daily based on cleaning duty.
- The CLD trainers sensitise users of the markets about not only theoretical hygiene and sanitation issues but also in practice by using the improved sanitation facilities.
- The CLD trainers hold sensitisation sessions at markets, churches and schools continually.
- Develop posters for sensitisation.

Project Outcomes:

- CLD trainers can improve their knowledge and training skills on sanitation and hygiene through trainings about the issue.
- Model schools promote sensitisation activities on sanitation and hygiene to the students.
- Sanitation conditions of markets are improved.
- The residents acquire knowledge and behaviour about sanitation and hygiene.

Implementation Schedule: The Rehabilitation Phase Project (from 2010 to 2018).

Estimated Project Costs (USD): US\$179,000.-

e) Clean-up Solid Waste and Promoting Recycling

Project Objective:

Foundation of grassroots actions for reducing rubbish and maintenance of gutters will be established in each quarter.

Project sites:

N'djili commune whole area.

Outlines :

Detail activities are as following.

- Final dumping method/site(s) are identified. Illegal dumping must be prohibited. Recycling/reuse of rubbish should be recommended.
- Design detail cleaning activities and decide roles and responsibilities of CLD members, the sanitation brigade and participants on the activities.
- Select the participants of the clean up activity and the training
- Training about hygiene and environmental education is conducted for the participants of cleaning up activities.
- The trained participants disseminate the hygiene and environmental education to their neighbours in street level.
- Clean up the selected streets and gutters
- Bring the collected rubbishes to final dumping site(s) or Recycling workshop(s).

Project Outcomes:

- A system of community based waste disposal will be established in each quarter.
- Participants will acquire knowledge about how to reduce rubbish.
- Streets and gutters will be cleaned up by the participants.

Implementation Schedule: The Rehabilitation Phase Project (from 2009 to 2015).

Estimated Project Costs (USD):

US\$167,000.- for 10 years

2)The Development Phase Project

Without successive 5 projects since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

3)The Long-Term Project

Development plan of the long-term project is a technical assistance project required for advancement of solid waste collection and disposal. Component of the technical assistance project is shown in Table 5.2.8

Table 5.2.8 Project Component for Solid Waste Management for the Long-Term

Section	Items	Specifications
Technical assistance	Introduction of new system for solid waste collection and disposal	- Existing condition survey - Introduction of new system for solid waste collection and disposal
	Improvement of legal systems for solid waste disposal	- Existing condition survey - Improvement plan of legal systems

Preliminary cost estimation of the solid waste management for the technical assistance project is shown in Table 5.2.9.

Table 5.2.9 Preliminary Cost Estimation for Solid Waste Management for Long-Term Project

Specifications	Quantity	Unit Price	Total Cost
Personnel cost			
<Introduction of new system and technology>	1	28,000	28,000
- Existing condition survey	2	28,000	56,000
- Introduction of new system for solid waste collection and disposal			
<Improvement of legal systems for solid waste disposal>			
- Existing condition survey 1 month	1	28,000	28,000
- Improvement plan of legal systems 1 month	1	28,000	28,000
Transportation cost	3	11,000	33,000
Total Cost (US\$)	-	-	173,000

Addition, preliminary cost estimation of the solid waste management for long term is shown in Table 5.2.10.

Table 5.2.10 Preliminary Cost Estimation for Solid Waste Management for Long-Term

Specifications	Quantity	Unit Price	Total Cost
- Tractors and trailers	16	29,000	
- Skip trucks (10 m ³)	13	80,000	
- Local produced skip-containers (10 m ³)	104	3,000	
- Bull-dozer	1	150,000	
Total Cost (US\$)	-	-	1,966,000

5.2.5 Integrated Action Plan for Health and Sanitation

10 year Action Plan for Health and Sanitation from 2009 to 2018 is shown in table below:

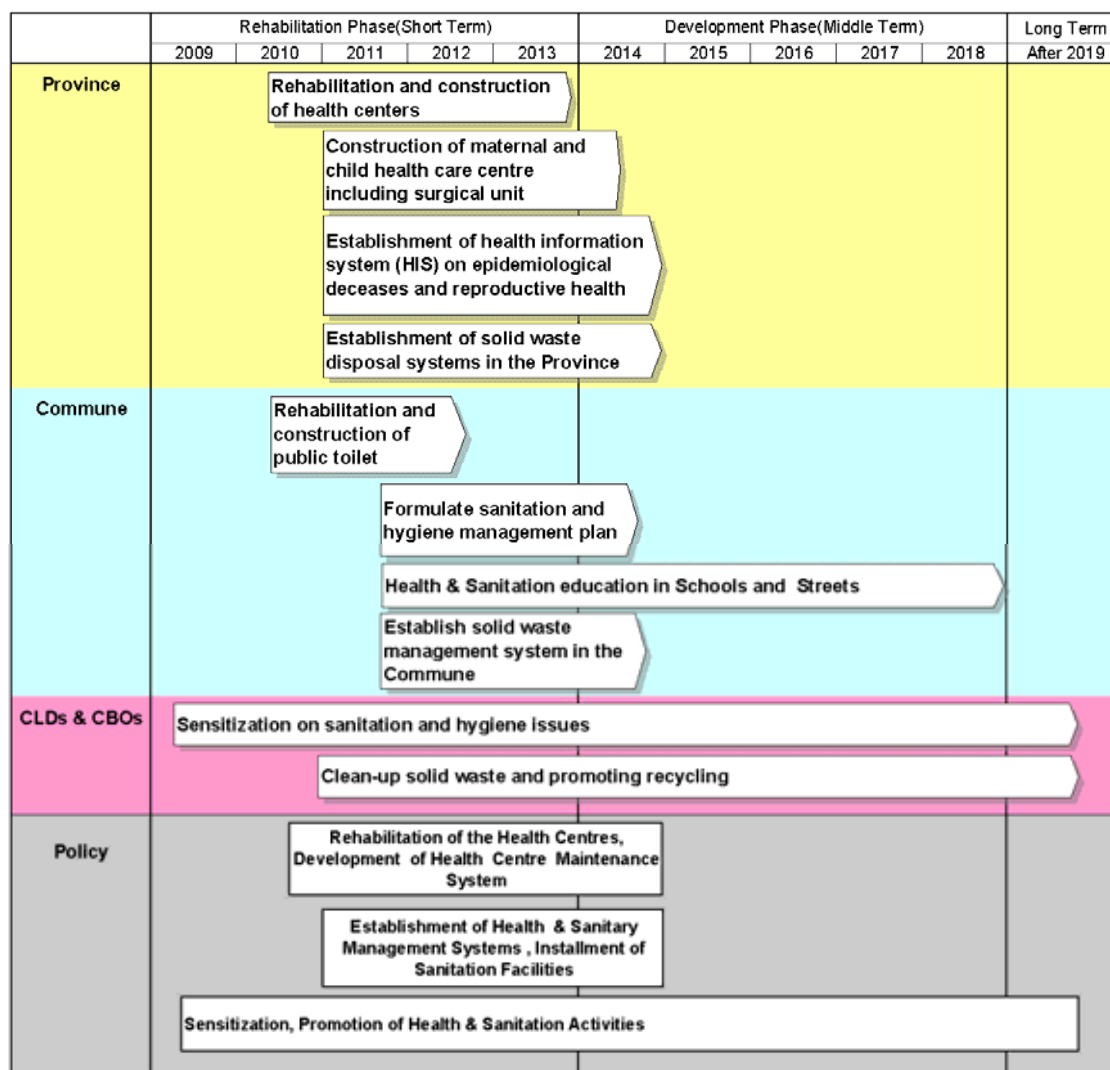


Fig. 5.2.1 Integrated Action Plan for Health and Sanitation

5.3 EDUCATION AND CITIZENSHIP

(1)Development Concept

Lack of educational facilities is the most serious problem for the Education. As Citizenship, capacity development of the Commune Administration and CLD, residents through trainings on community development and civil responsibilities is a Key to success to fulfill the Goal of the sector. Based on the Development Policy, the Development Concept of the sector gives high priority those issues for the project formulation.

1)Development Concept of the Rehabilitation Phase (Short-term Period; 2009-2013)
Project

Concerning educational facility, rehabilitation of school facilities shall be implemented for the students to study in stable condition. For that reason, improvement of facilities including

sanitation systems is essential and educational equipment such as benches, desks and black-boards in classrooms shall be provided. Many schools have broken, damaged and aging fences. Presently it is dangerous in stabilization of fences and in crimes. Thus fence and gate around a school shall be installed in regard to security. Extension plans for classrooms or other-function rooms can be planned as consecutive action.

Administrative capacity of the commune and the quarters is significantly important to facilitate the implementation of projects listed in the Action Plan and also to maintain it. The government should be a supervisor, a coordinator, and sometimes a facilitator for the implementation of government led or donor financed projects. Both individual and institutional capacity development are needed concerning planning, management, administrative skills, and securing accountability and transparency. The process of the JICA study contributed transferring knowledge and skills for participatory planning and project management to those who are engaged in the study. However, it is necessary for them to have further capacity development. In this background, capacity development of the Commune administration has a high priority on this issue. In addition, based on the valuable experience of Civic Education, it is expected to the commune and residents actions wider and more active. Collaboration with community, education for parents and financial problems facing the informal class of students shall be considered for action. Therefore, following a project is proposed at the Rehabilitation Phase.

- Rehabilitation of security fence for primary and secondary schools
- Rehabilitation of toilet for primary and secondary schools
- Rehabilitation of classrooms
- Strengthening Capacity of the Commune Administration
- Civic Education
- Non-formal education for out-of-school children

2)Development Concept of the Development Phase (Medium-Term Period; 2014-2018) Projects

Consecutive actions from Rehabilitation Phase, following projects are proposed at the Development Phase.

- Supply Equipment for Primary and Secondary Schools
- Sports and Culture Promotion in the Commune & Schools

(2)Proposed Project

1)Rehabilitation Phase Project

Rehabilitation Phase has following 6 Education and Citizenship Projects for implementation.

a)Rehabilitation of Security Fence for Primary and Secondary Schools

Project Objective:

- To ensure the environment of safe school-lives for children.
- To prevent school-children from collapse of fences and equipment/goods from being stolen.

Project sites:

N'djili commune whole area (targeted schools are not specified)

Outlines:

- Necessary Survey (Feasibility Study, Basic Design, Detailed Design).
- Construction and Supervision.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2014).

b) Rehabilitation of Toilet for Primary and Secondary Schools

Project Objective:

- Students' conditions become healthy.
- Establish hygienic environment in school.
- To prevent school-children from collapse of fences and equipment/goods from being stolen.

Project sites:

N'djili commune whole area (targeted schools are not specified)

Outlines:

- Necessary Survey (Feasibility Study, Basic Design, Detailed Design).
- Construction and Supervision.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2014).

c) Rehabilitation of Classrooms

Project Objective:

- To establish good condition to be easy to study in classroom.

Project sites:

N'djili Commune whole area (targeted schools are not specified)

Outlines:

- Site survey of classrooms.
- Make a list to be rehabilitated in classrooms
- Detailed Design
- Implementation of rehabilitation for roofing and supervision

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2015)

d) Strengthening Capacity of the Commune Administration

Project Objective:

Both individual and institutional capacity of commune and quarter offices is strengthened

Project sites:

N'djili Commune Office

Activities ;

- Review of government policies, TOR of each section and officer.
- Conduct SWOT analysis and/or problem analysis
- Analyses the result of SWOT and other analysis and identify necessary actions
- Conduct necessary trainings, for instance, participatory learning and action, appreciative inquiry, project cycle management for planning, monitoring and evaluation methods for project management, accounting and compliance management for administration, and office management including Japanese style KAIZEN, leadership training for management.
- Trained officers practice small improvement actions using KAIZEN mind.

Output:

- Competencies of target officers are identified.
- Necessary actions for improving the management/administrative system are identified.
- Target officers acquired necessary knowledge and skills through trainings.
- Trained officers can improve the management/administrative system continually

Implementation Schedule:

The Rehabilitation Phase Project (from 2010 to 2014).

Estimated Project Costs (USD):

US\$2,001,200,- for International Technical Cooperation.

e) Civic Education

Project Objective:

Participatory project planning and management skills of CLDs and CBOs are strengthened.

Project sites:

N'djili commune whole area

Activities:

- Necessary modules of civic education are updated.
- The commune administration organises trainings such as participatory planning, monitoring and evaluation, and participatory learning and actions for CLDs and CBOs.
- CLDs in collaboration with quarter administrations and related CBOs identify needs

for community development in participatory manner.

- CLDs organise planning workshops with the population regularly and identified necessary projects.
- CLDs formulate necessary community development projects
- CLDs implement those projects by themselves and/or request the government, NGOs and donors for their assistance.
- CLDs monitor and evaluate their designed projects and improve the projects continually.
- CLDs collaborate with various stakeholders in the commune in every stage of project cycle.

Output:

- Development workers from CLDs and other CBOs can improve their knowledge and skills continually (KAIZEN) through trainings about community development.
- Development workers from CLDs and other CBOs can identify community needs, plan and design community based projects and manage those project in participatory manner.
- Development workers from CLDs and other CBOs can promote community solidarity (YUI) in collaboration with government bodies (commune administration and quarter administrations).

Implementation Schedule: The Rehabilitation Phase Project (from 2009 to 2018).

Estimated Project Costs (USD) ;US\$6.500.- per year

f)Non-formal Education for Out-of-School Children

Project Objective:

Foundation of grassroots actions for non-formal education for out-of-school children and youth will be established in each quarter.

Project sites:

N'djili commune whole area

Activities:

- Necessary curriculum and texts are developed considering the experience of UNICEF.
- Trainees are selected in collaboration with youth associations in each quarter.
- Design non-formal education activities and decide roles and responsibilities of CLD members, youth associations and participants on the activities.
- Feedback lessons from the activities and draw a model of non-formal education in each quarter.
- Conduct the non-formal education for the trainees (200 persons from each quarter).

- In addition to the subjects of non-formal education, the trained CLD members disseminate the civic education through youth associations during the term.

Output:

- Models of non-formal education will be established in each quarter.
- Participants will acquire knowledge about literacy including life skills and civic issues.

Implementation Schedule:

The Rehabilitation Phase Project (from 2011 to 2015).

Estimated Project Costs (USD):

US\$35,500.-per year

2) The Development Phase Project

Development Phase has following 2 Education and Citizenship Projects for implementation..

a)Supply Equipment for Primary and Secondary Schools

Project Objective:

Improve study condition in schools/classrooms.

Project sites:

N'djili commune whole area (targeted schools are not specified)

Outlines:

- Investigation of equipments
- Make a supply plan
- Implementation

Implementation Schedule:

The Rehabilitation Phase Project (from 2014 to 2018).

Estimated Project Costs (USD):

US\$758,000.-

Remarks:

Some project for rehabilitation of classrooms and equipments are implemented by donors as BCECO,World Bank, OXFAM, BcoCo.

b)Sports and Culture Promotion in the Commune & Schools

Project Objective:

The primary and secondary schools in N'djili commune can operate sports and cultural clubs for pupils.

Project sites:

N'djili commune whole area (Targeted schools are not specified)

Activities :

- Appropriate sports and cultural activities which can meet the objective are identified

by teachers and parents as well as CLD members and members of youth associations/clubs

- Supervisors are selected from teachers in each government school.
- Train the supervisors/teachers concerning the management of school-based sports and cultural clubs.
- Establish sports and cultural clubs in each school
- Procurement of necessary equipment and materials for the activities
- Installation of necessary facilities
- Mobilise students to the sports and cultural activities after their class
- Teachers supervise and manage those activities respecting initiatives of pupils

Output:

- Teachers in the schools are trained to supervise students in sports and cultural activities.
- Sports and culture clubs are established in all government schools in N'djili.
- Pupils are mobilised to the sports and cultural activities.

Implementation Schedule:

The Rehabilitation Phase Project (from 2014 to 2018).

(3)Integrated Action Plan for Education and Citizenship

10 year Action Plan for Integrated Education and Citizenship from 2009 to 2018 is shown in the Table below;

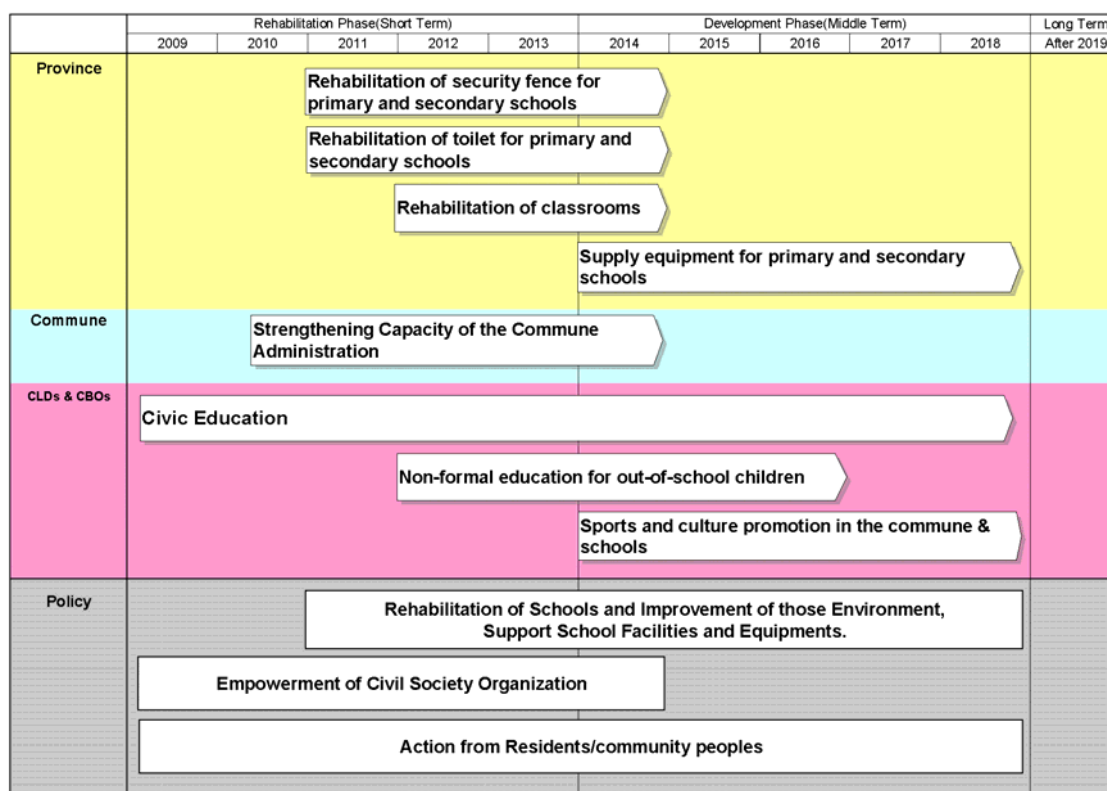


Fig. 5.3.1 Integrated Action Plan for Education and Citizenships

5.4 INDUSTRY AND EMPLOEMENT

(1)Development Concept

Concerning Industry and Employment, main problems on the sector are following 4 problems.

- Lack of job opportunities and increasing of unemployment ratio
- Malfunction of small vendors support systems
- Support requiring for agricultural production
- No activation of ITI function

To tackle with captioned problems, following development concepts of Industry and Employment can design for project formulation and implementations.

1)Development Concept of the Rehabilitation Phase (Short-term Period; 2009-2013) Project

Generating employment opportunity is the highest demand of N'djili residents. Promotion of the potential industries, especially in automobile repairing and carpentry works can contribute towards absorbing unemployed young generation. Collaboration with ITI N'djili can strengthen management capacity and quality of the factories or workshops. The commune and provincial government need to coordinate and facilitate them in establishing such systems. In the agriculture, introduction of new crops may have to be examined considering the market of

Kinshasa and probably markets in Europe. Furthermore, networking of small vendors is important to stabilise their daily income and to prevent exploitative negotiations. The networking should include information sharing among them and establishing a safety net system and a microfinance scheme. Therefore, following 5 projects are proposed at the Rehabilitation Phase.

- TOT of N'djili masters at ITI
- Rehabilitation of markets, storages
- Establish and operate farmers' market at SECOMAF
- Establishment of Industry Support Systems
- Establish N'djili industry association

2)Development Concept of the Medium-term Project

Without successive projects since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

(2)Proposed Projects

1)Rehabilitation Phase Project

Rehabilitation Phase has following 5 Industry and Employment, Projects for implementation.

a)TOT of N'djili masters at ITI

Project Objective:

Unemployed young population can acquire vocational skills through the vocational trainings by training centres in collaboration with ITI N'djili and local workshops

Project sites:

N'djili commune whole area

Activities:

- Identify local workshops which are willing to cooperate with vocational training programmes
- Establish a network among vocational training programmes, identified workshops and ITI N'djili
- Identify necessary vocational skills considering market needs (using the results of JICA study)
- Estimate necessary number of demanded skilled workers considering market needs
- Civic education and adolescent education are conducted simultaneously
- Conduct vocational trainings to unemployed young population
- Capacity enhancement of local workshops by ITI N'djili
- Internship and OJT in cooperation with local workshops

Outputs:

- Effective network among vocational training programmes, ITI N'djili and local workshops are established.
- Necessary vocational skills and the number of demanded skilled workers are identified.
- young trainees are trained under vocational training programmes

Implementation Schedule:

The Rehabilitation Phase Project (from 2011 to 2013).

b) Rehabilitation of Markets, Storages

Project Objective:

To facilitate business activities of the commune, rehabilitate public markets and storages with refrigerator.

Project sites:

All public markets, particularly Market Q7.

Activities:

Rehabilitation for shops in markets and new installation of new public markets, public toilet, and storage installed refrigerator, unloading space in Q7.

Implementation Schedule:

The Rehabilitation Phase Project (from 2012 to 2016).

c) Establish and Operate Farmers' Market at SECOMAF

Project Objective:

To facilitate agriculture activities of the commune, construct farmer's markets and storages with refrigerator.

Project sites:

SECOMF farm located in the along side of N'djili River.

Activities ;

Open the farmaer's marcket for agriculture products originated N'djili. Construct market tenant shops, public toilet, and storage installed refrigerator, with unloading space and traffic access to the centre of the commune. With technical assistance of operational management, newly constructed market will be operated by the farmer's association.

Implementation Schedule:

The Rehabilitation Phase Project (from 2013 to 2015).

d) Establishment of Industry Support Systems

Project Objective:

Models of industrial promotion will be examined.

Project sites:

N'djili commune whole area

Activities:

- A database for N'djili industry is prepared using the result of DMK survey and supplementary surveys if necessary.
- Associations of N'djili industry (or by sectors) are established.
- Discuss about collaboration among the workshops/small factories
- Take actions on the collaboration
- Business seminars are held including marketing, management and public private partnership (PPP).

Outputs:

- A network among workshops/small factories will be established.
- The participants will acquire knowledge and skills through business seminars.

Implementation Schedule ; The Rehabilitation Phase Project (from 2012 to 2018).

Estimated Project Costs (USD): US\$7,700.-per year

e)Establish N'djili Industry Association

Project Objective:

Network system among small vendors is established.

Project sites:

N'djili commune whole area

Activities:

- Review of the condition of small vendors in N'djili using JICA report.
- Formulate an association involving small vendors as much as possible.
- Identified their problems of daily works and shred them each other.
- Develop solution systems for them such as safety deposit and microfinance.
- Train the small vendors.

Outputs:

- An association of small vendors is established.
- Problems of small vendors are shared each other.
- Solution systems such as safety deposit and/or microfinance are developed.

Implementation Schedule: The Rehabilitation Phase Project (from 2011 to 2018).

Estimated Project Costs (USD): US\$4,000.-per year

(3)Integrated Action Plan for Industry and Employment

10 year Action Plan for Industry and Employment from 2009 to 2018 is shown in the table below:

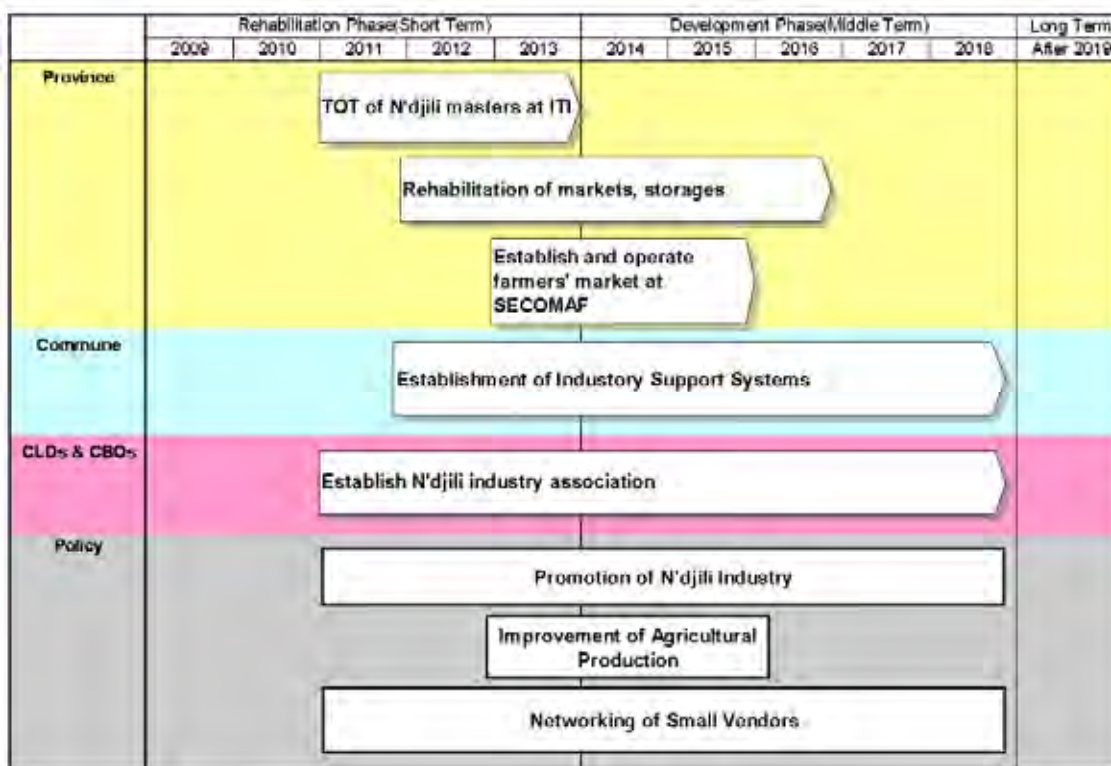


Fig. 5.4.1 Integrated Action Plan for Industry and Employment

5.5 WATER AND LIFELINE

5.5.1 Water Supply

(1)Development Concept

Concerning Water Supply, main problems on the sector are following 2 problems.

- Superannuation of Facilities
- Insufficient Water Supply Service/Management

To tackle with captioned problems, following development concepts of Water Supply Service can design for project formulation and implementations.

1)Development Concept of the Rehabilitation Phase (Short-term Period: 2009-2013) Project

Among the superannuation of facilities, the urgent problems of water Supply are the following three items.

- Breakage and extreme superannuating of distribution network and water supply facilities.
- Deterioration of water supply service such as suspension of water supply and the shortage of the amount of water supply

- Anxiety of safety of water supply such as sewage intrusion to the distribution network by the occurrence of negative pressure in a pipe at the time of interruption in supply

Therefore, following a project is proposed at the Rehabilitation Phase.

- Rehabilitation and upgrading of RESIDESO water supply network

2)Development Concept of the Development Phase (Middle-term Period: 2014-2018) Project

Without successive projects since started from Rehabilitation Phase, there is no proposed implementation project newly starts at the Development Phase.

3)Development Concept of the Long-term Project (After 2019)

After the completion of rehabilitation works by RESIDESO, the following items are proposed as subjects of long term development project.

- A charge collection corresponding to water consumption is not performed by a breakage and non-installation of water meter.
- With technical cooperation, the establishment of facility management technique by leakage-of-water investigation and introduction of data base management system are required. There is also need for carrying out continuous control of maintenance so that the present problem (water supply obstacle of the whole area by superannuating of a water pipe network) may not occur.

Therefore, following a project is proposed at the Rehabilitation Phase.

- **Technical Assistance Project for Management of the Distribution Network**

(2)Future Demand

The unit water demand used for the future water amount prediction of water supply is set up for each economy level of household, as shown in Table 5.5.1. Therefore, it is necessary to predict not only increase-in-population but transition of a household economy level. Since prediction of a household economy level was not conducted at present, the prediction of water supply based on the following assumption was performed.

Table 5.5.1 Water Demand in N'djili Commune

Year	Economy Level	Ratio (%)	Population	Unit water demand (lcp)	Total water Demand (m ³ /day)
2008	High	0.2	642	100	64
	Medium	53.7	172,248	60	10,335
	Low	32.1	102,965	40	4,119
	Non-connectio	14.0	44,907	25	1,123
	Total	100.0	320,762	-	14,516
2013	High	0.2	718	100	72
	Medium	64.8	232,502	60	13,950
	Low	35.0	125,580	40	5,023
	Total	100.0	358,800	-	19,045
2018	High	0.2	781	100	78
	Medium	76.8	299,904	60	17,994
	Low	23.0	89,815	40	3,593
	Total	100.0	390,500	-	21,665

Source: REGIDESO

Assumption of calculation conditions is set up based on the following ideas.

Ratio 23.0%(2018, Low) = (32.1%(2008, Low) + 14.0%(2008, non-connection))/2

The value of 35.0%(2013, Low) is a mean value between 2008 and 2018.

However, since a water pipe network improvement project is mainly replacement of small diameter pipes, the distribution network analysis based on the amount of demand is omitted.

(3) Proposed Rehabilitation Phase to Development Phase Project

1) Rehabilitation and Upgrading of RESIDESO Water Supply Network

Outlines of the Project;

- The water supply service in N'djili commune improves safety and provides reliable service.
- This project replaces the distribution network and the water supply equipments including water meters.
- The project area is the whole area of N'djili commune.
- However, the mainly replacement of distribution network is the tertiary pipes (less than 90 mm diameter), which are considered to have affected the water supply service greatly.
- Replacement of main distribution pipe in the network is taken as necessary minimum according to suggestion of REGIDESO.
- The reason is shown below.
- From 2013 to 2017, a large diameter distribution pipe in N'djili Commune is planned.
- Replacement of the main distribution pipe by REGIDESO is possible.

Project Component:

Component of the distribution network improvement project is shown in Table 5.5.2.

Table 5.5.2 Component of the Distribution Network Improvement Project

Section	Items	Specifications
Distribution network	Distribution pipe	PVCφ160 mm L= 1,800 m
		PVCφ110 mm L= 12,600m
		PVCφ 63 mm L=130,300 m
Water supply equipment	Service line	PVCφ25 mm L= 100,400 m
	Service line as riser pipe	GS φ3/4” L= 100,400m (Galvanized steel pipe)
	Water meter	DN15mm (16,700 pcs)

Source: REGIDESO

The following points are considered in the distribution network improvement project.

- This project replaces the distribution network and the water supply equipment with pipe material made from PVC. PVC was used in previous distribution network improvement projects (Kalamu, Lemba, Bandal commune).
- The standup pipe portion (rising pipe) of yard connection adopted Galvanized steel pipe because of strength requirements.
- Although roads are considered in their present condition, their repair is carried out as part of the community road maintenance project.

Preliminary Cost Estimation:

Preliminary cost estimation of the distribution network improvement project is shown in Table 5.5.3.

Table 5.5.3 Preliminary Cost Estimation for Distribution Network Improvement Project

Specifications	Quantity	Unit Price	Total Cost
- Distribution network and water supply equipment	1 set	-	4,052,000
Total Cost (US\$)	-	-	4,052,000

This cost estimation is direct construction cost only.

Most of roads in N'djili commune are not paved. Therefore, road repair expense is not contained in this cost estimation. In addition, the community road maintenance project is planned to follow this project. Even if the necessity for road repair arises according to the distribution network improvement project, the improvement by the above-mentioned project is expected.

(4) Proposed Long Term Project

1) Technical Assistance Project for Management of the Distribution Network

Outlines of the Project:

- The technical assistance project aimed at appropriate management for the distribution

network is planned.

- This project replaces the distribution network and the water supply equipments including a water meter.
- The distribution network management technique by leakage-of-water investigation and data base management system is established.

Project Component

Components of the project aimed at appropriate management of the distribution network are shown in Table 5.5.4.

Table 5.5.4 Component of the Technical Assistance Project for Management of the Distribution Network

Section	Items	Specifications
Technical assistance	Distribution network management	<ul style="list-style-type: none"> - Existing condition survey - Technolgy transfer of the distribution Network Management - Technolgy transfer of leakage investigation - Implementation of case study

Preliminary Cost Estimation

Preliminary cost estimation of the technical assistance project aimed at appropriate management for the distribution network is shown in Table 5.5.5.

Table 5.5.5 Preliminary Cost Estimation for the Technical Assistance Project for Management the Distribution Network

Specifications	Quantity	Unit Price	Total Cost
Personnel cost			
- Existing condition survey	1	28,000	28,000
- Technolgy transfer of the distribution Network Management	2	28,000	56,000
- Technolgy transfer of leakage investigation	1	28,000	28,000
- Implementation of case study	2	28,000	56,000
Transportation cost	3	11,000	33,000
Total Cost (US\$)	-	-	201,000

5.5.2 Life line/Electric Power Supply

As described in Chapter 4, the rehabilitation works of Electric Power Supply is belongs to authorities of the Central government, Kinshasa provincial government and SNEL. To resolve the captioned main problems, those of stakeholders, particularly SNEL, are required to formulate their Master Plan on the Electric Power Supply sector over the Kinshasa Province. In their Master Plan, every rehabilitation works in Kinshasa Province, including N'djili projects, will be identified by their own criteria/priorities. Therefore, this study does not refer to issue of the project implementation schedule concerning to Electric Power Supply.

5.5.3 Integrated Action Plan for Water and Lifeline

10 year Integrated Action Plan for Water and Lifeline from 2009 to 2018 is shown in the table below:

	Rehabilitation Phase(Short Term)					Development Phase(Middle Term)					Long Term
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	After 2019
Province	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Rehabilitation and upgrading of REGIDESO water supply network </div> <div style="border: 1px solid black; padding: 5px;"> Rehabilitation and upgrading of SNEL electricity supply network </div>										
Commune											
CLDs & CBOs											
Policy	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;"> Distribution Network Management </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> Resident cooperation in improvement works by REGIDESO, SNEL </div>										

Fig. 5.5.1 Integrated Action Plan for Water and Lifeline

5.6 PROPOSED IMPLEMENTATION SCHEDULE ON ACTION PLAN FOR N'DJILI

Based on The Study, comprehensive implementation schedule on action plan for N'djili is shown in Fig.5.6.1

Sector	Actor	Finances/ Cooperation	S/No	Rehabilitation Phase (Short Term)				Development Phase (Middle Term)						
				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Pillar 1 Urban Space (Urban Infrastructure) 1) Lack of road rehabilitation works 2) Lack of spaces for urban growth 3) Lack of road facilities ensure safety 4) No proper public transport facilities 5) Inefficient road network system	Province	Province/JICA Province/OVD/Donor Province/OVD/Donor Province/OVD Province/OVD Province/OVD/Donor Commune/NGO	1-P1	Rehabilitation of Luemba Biv.										
			1-P2	Rehabilitation of existing paved roads										
			1-P3	Capacity Development for Provincial Urban Planning Sections of the Province										
			1-P4	Improvement of N'djili Junction to relief traffic congestion										
			1-P5	Installation of Sidewalk and Traffic safety facilities/Pedestrian crossings, Traffic sign, Humps, etc.										
			1-P6	Improvement of Tertiary Roads										
	Commune	Commune/Donor Commune/NGO/Donor Commune/NGO/Donor GLD/NGO	Commune/Donor Commune/NGO/Donor Commune/NGO/Donor Commune/NGO/Donor	1-N1	Rehabilitation of community roads by LBT									
				1-N2	Rehabilitation of urban core zone(G7)									
				1-N3	Development of Community Core Zone									
				1-C1	Clean-up gutters together with the sanitation brigade									
Pillar 2 Health Town (Health & Sanitation) 1) Deterioration of Health Centres 2) Reinforcement of Health Management 3) No Collection System for Sewage 4) Lack of Public Toilets 5) No Collection Systems of Disposal 6) Need Sensitization	Province	Province/NGO/Donor Province/NGO/Donor Province/NGO/Donor Province Province/NGO/Donor Commune/NGO/Donor	2-P1	Rehabilitation and construction of health centers										
			2-P2	Construction of maternal and child health care centre including										
			2-P3	Establishment of health information system (HIS)										
			2-P4	Establishment of appropriate deployment system of doctors and nurses in N'djili health zone										
			2-P5	Establishment of solid waste disposal systems in the Province										
			2-N1	Rehabilitation and construction of public toilet										
	Commune	Commune Commune Commune Commune GLD/NGO	Commune/NGO/Donor Commune Commune Commune Commune/NGO/Donor	2-N2	Formulate sanitation and hygiene management plan									
				2-N3	Health & Sanitation education in the School									
				2-N4	Establish solid waste management system in the Commune									
				2-C1	Sensitization on sanitation and hygiene issues									
Pillar 3 Citizenship (Education & Citizenship) 1) Deterioration of Education Facilities 2) Need CBO Supports 3) Requirement of Civil Education	Province	Province/NGO/Donor Province/NGO/Donor Province/NGO/Donor Province/NGO/Donor Commune/NGO	3-P1	Clean-up solid waste and promoting recycling										
			3-P2	Rehabilitation of security fence for primary and secondary schools										
			3-P3	Rehabilitation of toilet for primary and secondary schools										
			3-P4	Rehabilitation of classrooms										
			3-N1	Strengthening Capacity of the Commune Administration										
			3-C1	Supply equipment for primary and secondary schools										
	Commune	Commune GLD/NGO GLD/NGO GLD/NGO	Commune/NGO Commune/NGO Commune/NGO Commune/NGO	3-C2	Non-formal education for out-of-school children									
				3-C3	Sports and culture promotion in the commune & schools									
				4-P1	TOT of N'djili masters at ITI									
				4-P2	Rehabilitation of markets, storages									
Pillar 4 Made in N'djili (Industry & Employment) 1) Lack of job opportunities 2) Need small vendors support 3) Need agricultural support 4) No activation of ITI function	Commune	Commune/NGO Commune/NGO Commune/NGO Commune/NGO	4-N1	Establishment of industry support systems										
			4-C1	Establish N'djili industry association										
			5-P1	Rehabilitation and upgrading of RESIDSO water supply network										
			5-P2	Rehabilitation and upgrading of SNEL electricity supply network										

Fig. 5.6.1 Proposed Implementation Schedule on Action Plan for N'djili

5.6.1 Financial Analysis

After Mobutu's regime of the Second Republic ended, the current regime has set up a new tax system: basically, there are taxes at the commune level and taxes at the local government level. Administrative tax collection for the 3 major categories is conducted on a communal basis under the following mechanism:

(1) Dues on Sales in Commune Markets

As Stand Tax, 100 FC/day is collected from Monday to Saturday, and on Sunday more or less 588 displays /tables as well as Healthiness/Security Tax of 50 FC for more or less 375 displays during 52 days. All the revenues are at the disposal of the commune.

(2) Commercial or Industrial Establishment Unique Tax

40% of the collected amount shall be transferred to the national account, and the remaining shall be used for the commune. Salaries for the public servant shall be paid from this account budget.

(3) Trading Tax

70% of the collected amount shall be transferred to the national account.

Following tables are actual budget allocated for the revenue and expenditure of N'djili Commune for the year 2007.

Table 5.6.1 N'djili Commune Revenue Budget for 2007

ITEM	LIT	DESCRIPTION	BUDGET (FC)
02	01	Hand made alcoholic drinks sales dues	32,205.00
02	12	Dues on sales in commune markets	64,122,182.00
03	01	Succession certificate tax	40,256.00
03	06	Civil status tax	3,975,280.00
03	07	Land registration tax	322,048.00
03	15	Commercial or industrial establishment unique tax	17,209,440.00
03	16	Minimum personal contribution	
06	02	Physical ability certificate tax	25,160.00
08	01	Uncontrolled captured beasts care tax	3,019.00
09	01	Trading tax	17,209,440.00
11	01	Bikes, carts and canoes plate number tax	301,920.00
16	01	Cutting trees permit tax	301,920.00
16	02	Bargaining amendment	1,509,600.00
		Total collection	95,315,550.00
30	12	Retrocession	122,297,000.00
		TOTAL GENERAL	217,612,550.00

Source: N'djili Budget Plan 2007

Table 5.6.2 N'djili Commune Expenditure Budget for 2007

ITEM	LITT	DESCRIPTION	AMOUNT
		1.Public loan Repayment	
11	10	Overdue personnel expenses	1,206,700.00
11	20	Good and service suppliers	419,900.00
		Sub/Total	1,626,600.00

		2.Financial charges	
22	10	Bank commissions	150,000.00
		Sub/Total	150,000.00
		3.Personnel expenses	
32	10	Permanent personnel basic treatment	2,160,00.00
32	11	Contracting personnel basic treatment	1,932,000.00
34	10	Bonus and permanent allowance	18,109,810.,00
34	20	Accommodation allowance	1,932,000.00
34	30	Transport allowance	18,470,400.00
34	40	Bonus, uncounted and no permanent allowance	1,540,000.00
34	60	Allowance	1,080,000.00
34	70	Mileage allowance	1,728,800.00
		Sub/Total	46,221,010.00
		4.Goods and facilities	
41	10	Supply and stationery	936,000.00
41	20	Books, subscription and library	186,000.00
41	50	Items and various products for cleaning	300,000.00
42	10	Spare parts vehicles	3,600,000.00
43	10	Chemical and energetic products	100,000.00
44	10	Food	2,216,000.00
44	30	Crockery and dishes	50,000.00
45	10	Cloth	150,000.00
45	20	Clothes	764,864.00
		Sub/Total	5,062,864.00
		5. Operational expenses	
51	10	Communications and telecommunications	2,354,976.00
51	30	Water supply for public halls	975,120.00
51	40	Power supply	360,000.00
52	10	Advertisement and announcement	200,000.00
52	20	Printing, reproduction, binding and conservation	900,000.00
53	10	Transport of stuff	150,000.00
53	40	Transport fees for service trips	585,990.00
54	10	House rent	120,000.00
54	30	Equipment and facilities rent	100,000.00
55	10	Furniture's and office facilities repair and cleaning	80,000.00
55	30	Cleaning and repair of general equipment	100,000.00
58	20	Training organization provision	100,000.00
58	31	Travel allowance at the interior	1,546,880.00
58	40	Secret fees for investigation	936,000.00
		Sub/Total	8,508,966.00
		6.Transfer and interventions	
62	20	Retrocession to communal markets	
63	50	Natural catastrophes, calamities and major accidents	150,000.00
66	10	Judiciary assistance	300,000.00
66	20	Aid and rescue	600,000.00
66	30	Allowances for caused harm	150,000.00
67	20	Pharmacy and medical care	575,000.00
67	30	Funeral fares	600,000.00
		Sub/Total	14,683,000.00
67	40	Commune advice office	19,063,110.00
		S/Total	19,063,110.00
		TOTAL	95,315,550.00

Source: N'djili Budget Plan 2007

Administrative activities in the commune are conducted with the financial resource of the provincial budget allocated. The following figure and table shows the medium term budget allocation for the major sectors on the basis of the provincial development program established for the period 2007-2011.

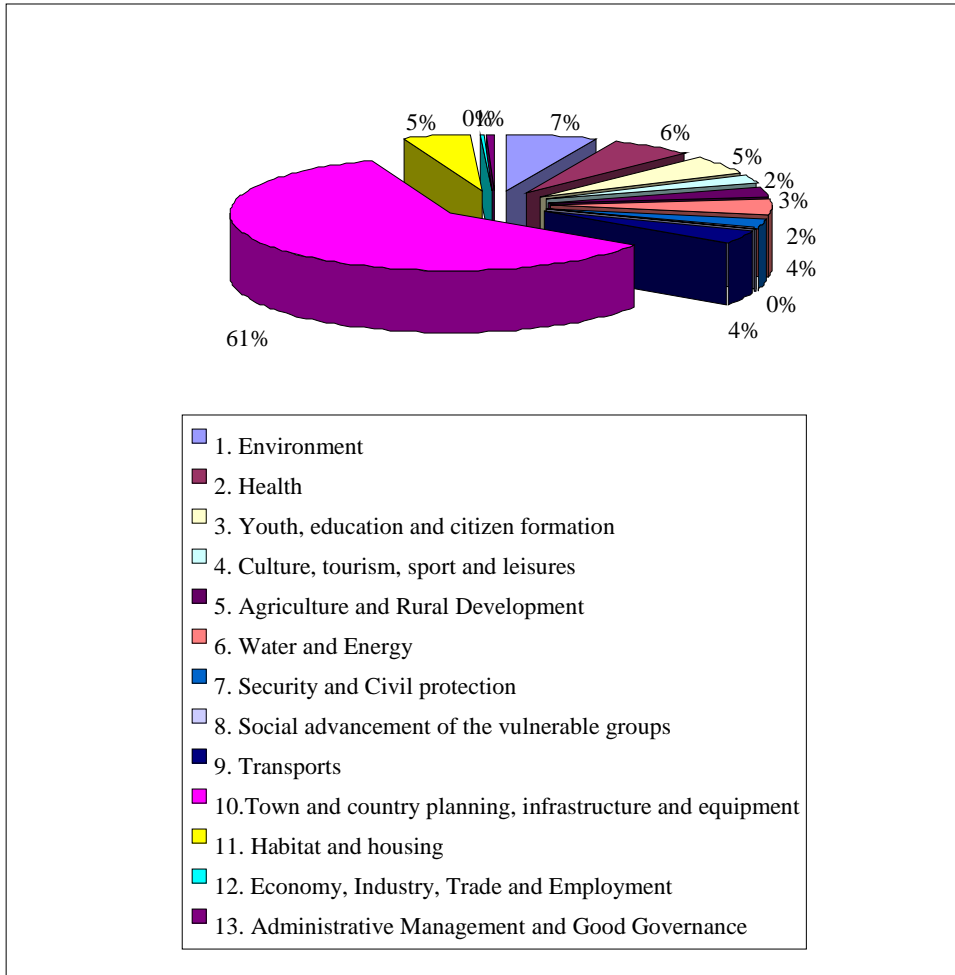


Fig. 5.6.2 Budget Allocation

Table 5.6.3 Provincial Government Program of Kinshasa 2007 – 2011 (\$US)

Sectors	Estimated costs	%	Financial program					
			2007	Parliament	2008	2009	2010	2011
1. Environment	88,891,408	5.8	27,554,900		22,054,900	16,554,900	10,554,900	12,171,808
2. Health	81,772,225	5.4	11,354,445	261,900	11,454,445	22,254,445	21,954,445	14,754,445
3. Youth, education and citizen formation	69,600,000	4.6	5,880,000	526,245	9,480,000	18,080,000	18,080,000	18,080,000
4. Culture, tourism, sport and leisure's	31,400,000	2.1	150,000	179,277	6,575,000	8,675,000	7,300,000	8,700,000
5. Agriculture and Rural Development	40,783,580	2.7	8,270,678	620,681	8,326,000	8,606,902	7,850,000	7,730,000
6. Water and Energy	58,265,270	3.8	13,850,000	0	12,140,000	12,260,000	9,840,000	10,175,270
7. Security and Civil protection	28,822,635	2.2	3,544,727	951,273	7,250,727	5,775,727	6,125,727	6,125,727
8. Social advancement of the vulnerable groups	4,727,700	0.3	645,540	0	845,540	1,045,540	104,540	1,145,540
9. Transports	49,775,000	3.3	6,515,000	1,507,145	6,815,000	11,815,000	12,315,000	12,315,000
10. Town and country planning, infrastructure and equipment	795,584,756	52.1	36,832,410	5,895,691	140,313,783	185,902,783	214,728,390	217,807,390
11. Habitat and housing	66,096,675	4.3	719,335	0	10,219,335	10,719,335	20,219,335	24,219,335
12. Economy, Industry, Trade and Employment	3,500,000	0.2	700,000	289,590	700,000	700,000	700,000	700,000
13. Administrative Management and Good Governance	8,673,100	0.6	2,050,620	11,073	1,970,620	1,650,620	1,600,620	1,400,620
Sub-total investment	1,327,892,349		118,067,655	10,242,875	238,145,350	304,040,252	332,313,957	335,325,135
Remuneration	100,000,000	6.5	10,000,000	0	15,000,000	25,000,000	25,000,000	25,000,000
Operation	100,000,000	6.5	10,000,000	0	15,000,000	25,000,000	25,000,000	25,000,000
GENERAL TOTAL	1,527,892,349	10.0	138,067,655	10,242,875	268,145,350	354,040,252	382,313,957	385,325,135
PROGRAM % BY YEAR	100.0		9.0	0.1	17.6	23.2	25.0	25.2

Source: Kinshasa Development Plan 2007-2011

5.7 MAJOR FINDINGS FROM ACTION PLAN

The Development Study for Urban Rehabilitation Plan of Kinshasa in the DRC was conducted for two objectives. One was to rehabilitate the situation of N'djili commune through the analysis

of present conditions and the formulation of Action Plan. The other was to propose a methodology for the rehabilitation of Kinshasa Province. In this section, lessons learned from the formulation of Action Plan and the subjects to be tackled for the realization of Action Plan are shown in order to establish the methodology for the rehabilitation of Kinshasa Province.

5.7.1 Achievement by the Establishment of Action Plan

(1) Establishment of Action Plan by the Participation of Residents

At first, the Study Team conducted planning workshop in each quarter and the focus group discussions. Through this process The Study Team deepened the perception about the present state of N'djili commune, and resident's concern was enlightened. After this process, the five stake holder meetings were held and two seminars were conducted in the process of the Action Plan establishment. The resident's understanding of the plan was deepened, and resident's opinion was reflected. Based on this procedure that enabled grasp of current state in N'djili and that enabled the understanding of residents, Action Plan was formulated.

(2) Active Participation from the Kinshasa Provincial Government

Without the participation of counterparts from the Kinshasa Provincial Government including N'djili commune authority, it was difficult to develop the Action Plan. The JICA Study organized the technical working group meetings to discuss details of the Action Plan. Active participation by the counterparts from the Provincial Ministry of Plan, Budget, Public Works and Infrastructure and N'djili commune office contributed preparing the Action Plan. Experience of the training in Japan on participatory urban community development, in addition, the counterparts got valuable ideas of Japanese experience and reflected them into process of action planning

(3) Awareness of People's Own Activity

In the Action Plan, the Study Team formulated not only the plan that has to be executed by the Kinshasa Provincial Government but also the plan that has to be executed by the commune administration and commune people. As a result, awareness that the improvement of the commune is achieved only by commune people themselves was obtained. And the importance of the role of CLDs and activation of CLD organization were recognized. Also the common view to necessity of change was obtained.

(4) Changing People's Mind

In the early stage of Stakeholder Meeting, some people insisted that the improvement of the commune is achieved only by the assistance of donors. But through the participation to establishment of the Action Plan as well as the process of Civic Education pilot project, people's

opinion for improvement of commune changed to the importance of their own mind and activity towards improvement. This is the greatest fruit of the people's participation to the Action Plan.

5.7.2 The Remaining Subjects to be Tackled

(1)Expansion of Participating People

Establishment of the Action Plan was attained by many people's participation, but the Action Plan is still not recognized among the most of residents of the commune. Therefore actions to extend the people's participation are required. The actions should attract more concern of the people and awaken their mind to the change.

(2)Strengthen of CLD Organization and Activation of Community-led Development

For the implementation of the Action Plan by the commune people, the organization of CLD is not well experienced to lead the majority of people to implement the project. Therefore strengthen of CLD organization and recognition of CLD by the commune people are required. To this end, practical implementation of the Action Plan by which the experience and the leadership of CLD can be enlarged is necessary. And lively activities by CLDs will spread and influence the general people.

(3)Implementation of Pilot Project

To fulfil the objectives of the study, mentioned 5.7, Pilot Project(s) are formulated to implement for verification of the Action Plan. Further explanation of the Pilot Project(s), refer to the Main Text Report.

As a result of above mentioned subjects, implementation of Pilot Project(s) which enable strengthen of CLD organization and the expansion of participation of commune people is the essential measure in The Study. Therefore the Pilot Project(s) should have the following functions;

- Participation of many commune people
- Intimate relationship to the current issue of the commune
- Mutual discussion among the CLDs under the initiative of the commune administration
- Implementation plan under the leadership of CLDs
- To affect the general commune people.

