

### 5.3 Rice Farming-Related Administration and Agricultural Support Services

Since 1994, Côte d'Ivoire has been implementing programs to reform the administration and support services in the agricultural sector under the National Agricultural Services Project (PNASA). PNASA I for the period from 1994 to 1997 was completed and PNASA II has been in progress since 1998. PNASA II has four components: 1) further support to ANADER which was integrated and reorganized in PNASA I as the sole organization in the country with responsibility for agricultural extension; 2) support to the National Agricultural Research Center (CNRA); 3) support to key directorates of the Ministry of Agriculture and Animal Resources (MINAGRA) and; 4) support for information dissemination through rural radio stations installed by the Ministry of Communications.<sup>4</sup> PNASA II consists of three phases, i.e., First Phase (three years), Second Phase (four years) and Third Phase (four years), and these phases automatically follow on taking the evaluation results of the previous phase into consideration. The total project cost for the 11 years is estimated to be US\$600 million to be funded by a World Bank (IDA) loan (US\$150 million), the Government of Côte d'Ivoire (approximately US\$210 million) and the project beneficiaries (US\$230 million). As PNASA aims at providing services by government organizations to support the sustainable growth of the agricultural sector through the improvement of productivity at the farm level, the administration and support services relating to the development of rice cultivation are currently undergoing profound changes under this project.

#### (1) Ministry of Agriculture and Animal Resources (MINAGRA)

The administrative body most closely related to the development of rice cultivation in Côte d'Ivoire is MINAGRA. The reorganization of the Minister's Office announced on August 5, 2002 divided MINAGRA into the Ministry of Agriculture and Rural Development and the Ministry of Livestock and Fisheries. As the former includes the Directorate General of Rural Development (DGRD) and the Directorate General of Agricultural Products (DGPV), it is responsible for policies and administration relating to rice cultivation. DGPV was born from the splitting of the former Directorate General of Production (DGP) into DGPV and the Directorate General of Animal Resources (DGAR). According to Mr. Kohei Ajiro, a Japanese adviser to MINAGRA, there was still confusion regarding the division of work between the different directorates and others as of August 2000 when the field survey for the present study took place and, therefore, the current situation is unclear. The following description, therefore, relates to the situation before the ministerial reorganization.

The Minister's Office is responsible for rice cultivation policies and is also often in direct charge of cooperation projects. The Rice Project in the Central Region (PRC) assisted by the European Development Fund (FED) adopts this arrangement.<sup>5</sup> However, it is difficult to find counterparts with an engineering background in the Minister's Office and the officers appear to be seldom directly involved in projects. The preliminary study team that visited the

---

<sup>4</sup> World Bank, Agriculture III, Country Department 11, Africa Region, "Project Appraisal Document on Proposed Adaptable Program Loan Credit in the Amount of SDR 37.1 Million (US\$50.0 Million Equivalent) to the Republic of Côte d'Ivoire for a Second National Agricultural Services Support Project in Support of the First Phase of a National Agricultural Services Support Program", June 23, 1998.

<sup>5</sup> FED could not achieve agreement on PRC with ANADER during the project preparation period and FED terminated its cooperative relationship (the background is unknown). See Ajiro, K., "Project Implementation Body for PASEA", possibly written in 1999.

Minister's Office and the then Directorate General of Agriculture in February 1999 to discuss the Farming System Improvement Project for Small-Scale Irrigated Agriculture (PASEA) reported that MINAGRA did not appear to understand properly the activities under the Agricultural Mechanization Training Center Project, which MINAGRA has been involved as the responsible organization and that there is no evidence of follow-ups.<sup>6</sup> The preliminary study team also reported that MINAGRA appeared to incorrectly regard PASEA as being the same as other grant aid projects and that senior members of MINAGRA did not appear to have any self-awareness as the project implementation body.

## (2) National Rice Program (PNR) of MINAGRA

PNR is a section that was established in 1996 and is attached to the Minister's Office of MINAGRA. Its mission consists of: 1) participation in the formulation of rice cultivation development and promotion policies; 2) coordination and management of rice cultivation-related programs and projects; and 3) development and management of an information system capable of evaluating import trade, improvement of productivity as well as farms and the rice market in an integral manner. PNR conducts activities for the modernization and mechanization of the rice production system in line with the National Rice Production Redevelopment Plan 1996-2005.<sup>7</sup> The name "National Rice Program (PNR)" is given because the creation of a new government office is not permitted under the administrative reform policy and it can be assumed that PNR is essentially the section in charge of rice cultivation of MINAGRA. PNR also acts as a desk to receive rice and rice cultivation-related aid, such as KR and 2KR, and its activities include the sale of agricultural machinery and fertilizer, the development of irrigation facilities and the recruitment of settlers. It was the counterpart for FED's PRC and the Irrigated Agriculture Development Project in the North-Central, which was implemented with grant aid provided by the Government of Japan.

MINAGRA has recruited engineers who have left ANADER as a result of organizational reform and has assigned them to PRC and other projects (approximately 200 engineers according to Mr. Ajiro). As rice cultivation engineers tend to be reassigned to PNR, the preliminary study team mentioned earlier reported an increasing number of technical personnel at PNR and increasing overlapping of the activities of PNR and ANADER.<sup>8</sup> In fact, when the present Study Team visited the project sites of the above-mentioned Japanese grant aid project, PNR explained that although assistance for and technical extension to farmers organizations should, in principle, be conducted by ANADER, PNR is demanding budgetary appropriation to conduct these activities due to the inactivity of ANADER in these fields. According to Mr. Ajiro, the basic idea for the provision of extension services in Côte d'Ivoire is for project implementation bodies to entrust extension work to extension organizations based on a contract. The general understanding is that the subcontractor for this extension work, be it ANADER, a NGO or a consultant, should be determined through the tender process. Accordingly, ANADER is not necessarily the automatic choice for extension work. However, it is at least necessary for PNR to incorporate the prospective manner of providing extension services in the project plan whenever PNR implements a rice cultivation project.

---

<sup>6</sup>JICA, "Report of Preliminary Study on the Irrigated Rice Farming Promotion Project in Côte d'Ivoire", March 1999, p. 43.

<sup>7</sup>Ibid., p. 44.

<sup>8</sup>Ibid., p. 44.

### (3) National Rural Development Agency (ANADER)

ANADER is the sole public agricultural extension organization in Côte d'Ivoire and was established in 1993 under a government ordinance to "improve the living standards of rural communities through the specialization of agricultural producers".<sup>9</sup> Here, agricultural producers include all of those engaged in crop cultivation, forestry, livestock production, fish culture and fisheries. At first, it was a special status corporation (*société d'économie mixte*), but its status was changed to a limited company (*société anonyme*) with a government share holding of 35% and a private sector (CNRA, farmers unions, etc.) share holding of 65% under the assistance of PNAS A I. Although the composition of investors has been changed, the private sector has only contributed to the initial capitalization with the operating funds being almost entirely dependent on the government, leading to criticism that there has been no real reform unlike former state enterprises in the agricultural sector (dealing with coffee, cocoa, cotton, etc.) that have been fully privatized.

PNASA II plans to strengthen the support for applied research, extension and farmers organizations through further organizational reform, human resources development and infrastructure improvement. Out of the four components of the First Phase of PNAS A II, the budget for the first component (support to ANADER) of US\$116.6 million accounts for 58% of the total project cost, illustrating the primary emphasis of the World Bank on the improvement of extension services. However, the World Bank wants to see the progress of reform as well as improved support and increased emphasis on the management and financial contribution by users under PNAS A II should be seen in this context. One of the measures contemplated is the establishment of an agricultural service support fund with the enactment of a new law to finance more than 50% of the operation cost of ANADER. It is unknown, however, if such a law has actually been enacted.

ANADER has a nationwide network of eight local bureaus and 60 branches with its headquarters in Abidjan. Under PNAS A II, transfer of the decision-making power for technical programs, human resources management and budget execution by the headquarters to local bureaus is planned. However, as of February 1999, no major change has taken place regarding the number of departments at the headquarters. Instead, progress has been made in regard to the integration of local bureaus and an increase of the number of branches (previously eight local bureaus and 50 branches).<sup>10</sup> When the present Study Team visited the Central Bureau at Bouaké and other places, it appeared that these offices are vigorously conducting various activities using their rich human resources. According to a Japanese expert and others, however, ANADER has not yet reached the stage where it can effectively provide extension services for farmers. For any plan to provide cooperation to strengthen extension activities, it may be necessary for such plan to include activities to improve the organization and operation of ANADER.

---

<sup>9</sup> See Ajiro, K., "Project Implementation Body for PASEA".

<sup>10</sup> JICA, "Report of Preliminary Study on the Irrigated Rice Farming Promotion Project in Côte d'Ivoire", *op. cit.*, p. 45.

#### (4) National Agricultural Research Center (CNRA)

PNASA II supports CNRA, which was newly created in 1998 by integrating the Savannah Institute (IDESSA, in charge of food crops), the Forest Institute (IDEFOR, in charge of perennial crops) and the Ivorian Center for Technological Research (CIRT in charge of food processing and others). Like the support to ANADER, the support to CNRA under PNASA II intends the efficient delivery of the services required by farmers through the decentralization and privatization of the organization and management. CNRA also plans to intensify the collaboration with national agricultural research organizations in other West African countries and international agricultural research organizations. In the case of rice research, however, the roles and concrete activities of CNRA appear to be rather limited at present, presumably because of the existence of WARDA in Côte d'Ivoire. To be more precise, the development and extension of new rice varieties, mainly NERICA varieties, are conducted by WARDA in collaboration with ANADER. In the coming years, promotion of the joint activities of CNRA and WARDA will be necessary while clearly defining the roles and activities of CNRA.

### **5.4 Technological and Environmental Problems on Rice Cultivation**

#### (1) General Situation of Rice Cultivation

Despite the very limited geological scope and period of the Study in Côte d'Ivoire as in the case of Guinea, the field investigation in the two countries immediately observed the diversity of "rice cultivation" in this region. Rice cultivation in West Africa can be classified into various ecological types described in Chapter 4 from the viewpoints of water supply and topography. Nevertheless, the boundaries between these types are "ambiguous" and can be changed by meteorological conditions and human intervention.<sup>11</sup>

For example, there is an area described as the upland-lowland continuum where the boundary between rainfed upland and rainfed lowland is blurred and it is difficult to classify the hydromorphic area between these two types as either of them. Moreover, the boundary between rainfed lowland and irrigated lowland is also difficult to draw. In this report, irrigated lowland (paddy field) is defined as an area where an artificial irrigation system is constructed by a public organization using public funds. Rainfed lowland includes various forms and levels of irrigated fields with the scale of cultivation ranging from 1 ha to several tens of hectares by individual farmers, farmers groups, village unions, etc. The irrigation systems are also diverse based on different sizes of weirs, reservoirs, irrigation canals and water pumps in addition to water harvesting with the skilful distribution of ridges to make the best of the local micro-topography. Such diversity implies that rice cultivation on irrigated lowland in Côte d'Ivoire is still in the midst of the development process.

Rice cultivation in West Africa is sometimes classified into two types, i.e., upland and lowland. These two types alone, however, cannot describe the diversity of rice cultivation in

---

<sup>11</sup> Lançon, F. and Erenstein, O., "Potential and Prospects for Rice Production in West Africa", Sub-Regional Workshop on Harmonization of Policies and Coordination of Programmes on Rice in the ECOWAS Sub-Region, Accra, Ghana, February 25-28, 2002, p. 5. WARDA classifies rice ecology into five types: rainfed upland, rainfed lowland, irrigated lowland, mangrove swamp and deep water swamp. According to Dr. Hiroko Takagi, an international research coordinator and breeding expert of JIRCAS, JIRCAS uses basically the same classification system, though slightly different terminology is used.

this region. Small inland valley, inland valley swamp or inland valley bottom is often referred to as a target area for the immediate development of irrigated rice cultivation because of the conceived high potential. It must be noted, however, that the reality of this area is also diverse and differs from the impression given by the use of the term “valley” in Japanese. In any case, the use of a uniform classification system is important to create a common understanding of the reality of rice cultivation in West Africa among those involved in this issue in addition to the formulation of a development strategy for rice production and Japanese cooperation policies in this region based on such an understanding.

The difficulties of clearly classifying the types of rice ecology in West Africa and of understanding the importance of each type originate from the lack of reliable data on the reality of local rice cultivation (the ambiguous boundary between ecological types is a cause of the difficulty of producing reliable data). Table 5-3 shows the shares of the five ecological types in terms of the planting area based on the latest FAO data which WARDA researchers believe to be “the best estimate” and the estimate for each member state of WARDA (only those for Guinea and Côte d’Ivoire are shown here). Most of the data given here is for the early 1990s and there is no evidence that the data has been verified by a fact-finding survey, etc. according to the results of interviews with people related to agriculture in these two countries.<sup>12</sup> In addition to the employment of a uniform classification system, the establishment of reliable statistics based on an accurate understanding of the reality and trends of diverse rice cultivation in West African countries is an urgent task to be met to advance cooperation for rice cultivation in West Africa.

**Table 5-3 Share of Area Planted by Rice Ecological Type in West Africa**

Country	Total Area (1,000 ha)	Mangrove Swamp (%)	Deep Water Swamp (%)	Irrigated Lowland (%)	Rainfed Lowland (%)	Rainfed Upland (%)	Year of Statistics
Guinea	650	13	10	5	25	47	1991
Côte d’Ivoire	575	0	3	6	12	79	1991/92/94
West Africa Total	4,011	4	9	12	31	44	-

Source: Estimated by FAO and agricultural research systems in individual West African countries. Partly cited from Lançon, F. and Erenstein, O., “Potential and Prospects for Rice Production in West Africa”, Sub-Regional Workshop on Harmonization of Policies and Coordination of Programmes on Rice in the ECOWAS Sub-Region, Accra, Ghana, February 25-28, 2002, p. 5.

Table 5-4 shows the share of the rice production by ecological type calculated on the basis of the yield of each type, in turn estimated by WARDA based on the knowledge and information of experts of FAO and West African countries (as in the case of Table 5-3, only the data of Guinea and Côte d’Ivoire are shown). The rankings of the different types for entire West Africa differ from those based on the area planted because of the difference in yield per unit area. While rainfed lowland has the largest share, irrigated lowland has a 28% share of the production volume despite its share of 12% in terms of the area planted. According to WARDA researchers, expansion of the rainfed upland area has become difficult, even in Guinea, where rice cultivation has been traditionally conducted in rainfed upland areas, because of the declined fallow period due to the population pressure on arable land.<sup>13</sup> There is a question mark on these statistics which rank rainfed upland first in terms of both the area

<sup>12</sup> When asked about “the share of rainfed upland areas in the national rice cultivation area, most government officials stated “90%”. When asked further “whether such data has been verified”, the replies included “the figure is a rough estimate” and “our problem is a lack of means to investigate the real situation”.

<sup>13</sup> Lançon, F. and Erenstein, O., op. cit., p. 11.

planted and production in Côte d'Ivoire as it is suspected that the situation of rice cultivation in the country has been changing since the early 1990s.

**Table 5-4 Share of Production by Rice Ecological Type in West Africa**

Country	Mangrove Swamp (%)	Deep Water Swamp (%)	Irrigated Lowland (%)	Rainfed Lowland (%)	Rainfed Upland (%)
Guinea	17	7	10	34	32
Côte d'Ivoire	0	2	14	19	64
West Africa Total	4	5	28	36	25

Source: Partly cited from Lançon, F. and Erenstein, O., "Potential and Prospects for Rice Production in West Africa", Sub-Regional Workshop on Harmonization of Policies and Coordination of Programmes on Rice in the ECOWAS Sub-Region, Accra, Ghana, February 25-28, 2002, p. 6. Estimated by WARDA based on information supplied by experts of FAO and West African countries.

Although the Study Team did not have the opportunity to visit the Western Region of Côte d'Ivoire, where rice cultivation in rainfed upland areas is said to be most vigorously conducted, it appears that the leading rice producing area in the country is shifting from rainfed upland to rainfed lowland according to the results of interviews with rice producing farmers using rainfed upland in Gagnoa located in the West Central Region and with similar farmers in the north of Bouaké. According to farmers participating in a CBSS program supported by ANADER in the north of Bouaké, local upland rice varieties are unpopular in the area because of their long growing period of five months, i.e., high risk, given the unstable rainfall in the area. The development of new NERICA varieties with a shorter growing period (approximately three months) has made it possible to reintroduce upland rice cultivation. The results of interviews with farmers in Gagnoa do not indicate a clear trend of upland rice cultivation in this area. Although the Study Team requested the head of the Gagnoa Branch of ANADER to arrange a visit to a rainfed upland rice area cultivated by local farmers in addition to an experimental upland rice cultivation site of WARDA located in a suburb of Gagnoa, the Study Team could only visit the farmland of a farmer assisted by ANADER. Further visits to an upland rice area were abandoned because of the long traveling distance. The overall impression is that the share of rainfed upland is also declining in this area.

According to the explanation given by the Central Regional Bureau of ANADER, the problems of upland rice cultivation in the Central Region are a low yield (average of approximately 1 ton/ha), time-consuming weeding, disruption of rice cultivation by alang-alang, particularly in recent years, and difficulty for the regeneration of vegetation due to repeated bushfires during the dry season. In contrast, lowland rice cultivation faces a major problem in regard to land preparation (plowing, leveling, edging, etc.) because of the need for large labor input even though the yield (average of approximately 2 tons/ha) is much higher than that of upland rice cultivation. For rice cultivation under the condition of little water management, land preparation and the planting of rice with good timing for rain and heavy labor concentrated in a short period are essential. People engaged in rice cultivation near Bouaké and Yamoussoukro in the Central Region visited by the Study Team are settlers from the north (reputed to be hardworking). It is said that farmers in the Central and Southern Regions dislike stepping into paddy fields for social and cultural reasons. While one of the reasons given is the belief that evil spirits inhabit lowland swamps, the real reason may be the avoidance of malaria and other water-borne diseases. The biggest problem of lowland rice cultivation based on the opinions of PNR staff, officials of the Central Regional Bureau of ANADER, local farmers and Japanese experts, however, appears to be the field preparation work that requires large labor input.

## (2) Strategies of WARDA

While WARDA has been attracting much international attention recently because of its development of NERICA varieties, several researchers, including the Director, have pointed out the importance of NERICA varieties for the stabilization of rainfed upland rice cultivation and also the much larger potential of lowland from the viewpoint of increasing rice production to reduce the rapidly growing rice imports. Mr. Nwanze, the Director General of WARDA, explains WARDA's strategies as follows.

- Short-term (5-7 years): development of varieties with high productivity for rainfed rice cultivation (NERICA varieties represent the short-term strategy)
- Medium to long-term: development of new varieties for lowland rice cultivation

The medium to long-term strategy is required in view of the fact that the area of rainfed upland is decreasing in each African country with few prospects of a long-term increase. It is impressive to hear the expression of some researchers that "NERICA is not a product but a technology". The introduction of NERICA varieties is expected to intensify rice cultivation at shrinking rainfed upland, i.e., to increase the yield per unit area. Table 5-5 shows the development potential of each type of rice ecology compiled by WARDA researchers.

**Table 5-5 Potential for Increased Area and Technological Change by Rice Ecological Type in West Africa**

		Mangrove Swamp	Deep Water Swamp	Irrigated Lowland		Rainfed Lowland	Rainfed Upland
				Sahel	Wet		
Short-Term	Potential for Increased Area	Very limited	None	Possible with rehabilitation	Limited	High	Decrease
	Technological Elements for Intensification	Varieties	None	Varieties and crop care	Varieties	-	NERICA
Long-Term	Potential for Increased Area	None	None	Possible	Possible	-	None
	Technological Elements for Intensification	Crop care	None	-	-	Varieties	Crop care

Source: Lançon, F. and Erenstein, O., "Potential and Prospects for Rice Production in West Africa", Sub-Regional Workshop on Harmonization of Policies and Coordination of Programmes on Rice in the ECOWAS Sub-Region, Accra, Ghana, February 25-28, 2002, p. 10.

## (3) Technological and Environmental Problems of Rice Cultivation

### 1) Soil Degradation due to Continued Upland Rice Cultivation with Slash and Burn Method

As described in Chapter 4, this problem is observed in Côte d'Ivoire and appears to be particularly serious in Guinea, though the field survey period in Guinea this time was very short. In Côte d'Ivoire, upland rice cultivation has been the dominant form in the past (when Wakatsuki visited the country in 1987) near Bouaké and Yamoussoukro in the Central Region and inland rice cultivation in lowland areas was seldom observed. The latest visit, however, witnessed a rapid expansion of lowland rice fields by the self-help efforts of local farmers as well as various development projects. While declining soil fertility due to soil degradation and the expansion of alang-alang grassland (due to the disappearance of forests) are assumed to be the main causes of the uncultivability of upland rice in these areas, the recent decline of

rainfall is also said to be responsible. Under these circumstances, NERICA varieties are grown at a PNR farm near Yamoussoukro that produces seeds under contract with WARDA and also by some farmers near Bouaké. The growth of rice is poor in both cases, suggesting a yield of less than one ton/ha. According to farmers who are entrusted to cultivate NERICA varieties, it may be possible for NERICA varieties to revive upland rice cultivation in areas where drought is becoming a routine phenomenon (transitional forest belt from the Guinea savannah) because of the shorter growing period of 90 days compared to the 120 days of traditional varieties. Their opinion is that the slash and burn method of upland rice cultivation is always an option for poor farmers who can only rely on the African hoe. They prefer upland rice cultivation because of the easier and lighter land preparation work compared to lowland rice cultivation. Meanwhile, the use of oxen or a tractor appears to be necessary for rice cultivation in lowland areas as described below because of the need for plowing.

## 2) Example of Low Cost Participatory Lowland Rice Farming

Since 1999, WFP has been implementing a food for work project jointly with Japan, ANADER of Côte d'Ivoire and others. Under this project, rice of the Government of Japan is purchased by WFP using the trust fund contributed by Japan and 3 kg of rice (equivalent to US\$1.5) is provided for a day's labor by women in poor rural areas to construct reservoirs, weirs, water channels and irrigated paddy fields. Fine, small irrigated paddy fields have been created in these areas at a cost of US\$2,000-3,000 per hectare. The project is also unique in that the supply of rice is linked to the activities of villagers to support school meals to promote primary education. Only one coordinator has been dispatched from Japan and technical assistance is provided by AICAF and WARDA at appropriate times. In the three years of the project implementation so far, some 2,000 ha of paddy fields have been developed (costing some ¥500 million so far) through joint work with farmers groups (10,000 members). These achievements are far superior to those of other Japanese ODA projects for the development of irrigated paddy fields, such as the Lower Moshi Project in Tanzania (2,000 ha have been developed in the last 15 years at a cost of some ¥5 billion, which is considered to be a successful example) and the Lower Anambra Project in Nigeria (development of 4,000 ha in 10 years at a cost of ¥15 billion), in terms the cost, direct investment for poor farmers (supply of food), organization of farmers groups, OJT, primary education and support for women. The project is still in progress and is achieving positive results in every conceivable field, including social development, human development and infrastructure development (small-scale irrigated paddy fields).

The inland valley development by WFP not only provides food for poor people but also builds the foundations for future food production. This is the first attempt of its kind by the WFP, which is planning to extend this successful model in Côte d'Ivoire to such neighboring countries as Ghana, Guinea and Burkina Faso. The fact that the project is being implemented with a Japanese initiative is also important. As the project aims at achieving sustainable food production through the development of irrigated paddy fields in Africa in the coming years, it is deemed to be the most promising project in West Africa observed by Wakatsuki up to the present. This WFP project also receives effective technical assistance from AICAF. As far as the sustainability of WFP's Food for Work method, the key point is whether the project can be sustained without food supply, which has been the direct incentive for farmers' participation in the project so far. As this entirely new method is a promising sustainable irrigated paddy field development method for the region, the project's continuation for at least



5-10 years instead of ending it in three years or so is important in view of the method's consolidation.

### 3) Development of Small-Scale Irrigated Paddy Fields: Dam or Intake from River?/ Conventional Japanese ODA Method or Participatory Method of WFP and Others?

The Lokapli Dam constructed in an inland valley bottom near Bouaké with Japanese grant aid is an example of conventional ODA and, as such, may not be a good case for comparison. However, the facts regarding this dam are analyzed below to clarify the problems of conventional ODA. The construction cost was approximately ¥700 million and the plan was to enable double-cropping on some 130 ha of irrigated paddy fields. In reality, the planting area has turned out to be approximately 80 ha due to the presence of upstream paddy fields for which water intake is difficult and downstream paddy fields from which drainage is difficult. The dam is shallow and some 60 ha of land is covered by a reservoir. In conclusion, the dam construction cost is high and its only advantage is stable rice cultivation because of the availability of water during a drought.

In contrast, the WFP method mainly features low cost weirs with a simple structure. Hardly any additional land is covered by water and upstream land can also be developed. Vegetables and other crops can be cultivated in the dry season. In the case of Lokapli, a total area of some 150 ha could have been developed if the river intake method had been adopted (assuming some 20 ha, i.e., one-third of the land under the dam reservoir, could be developed). Cropping, however, is conducted just once in the rainy season. Under the major drought conditions observed in 2001, there was hardly any rice harvest in the rainy season near Bouaké, which includes the Lokapli area. The Lokapli Dam, in fact, proved its merit on this occasion as rice was harvested in the rainy season and not in the dry season.

Farmers obviously prefer the Lokapli method as they cultivate rice on accomplished paddy fields. The Lokapli method offers a paddy field system for farmers with a higher function as long as such a system is presented to them. When the wide recruitment of farmers willing to develop new paddy fields through self-help efforts is attempted, however, the existence of farmers engaged in rice cultivation at such high cost and high function paddy fields constitutes a negative factor. This is a similar situation to that of direct food aid for Africa, which can sometimes dent the willingness of farmers to produce food. Careful attention must, therefore, be paid to not imperiling the self-help efforts of farmers even in the provision of grant aid.

The economy of the water intake method varies depending on the ecological environment. Riverwater intake is suitable for areas with a stable river flow, such as the transitional forest zone and the tropical forest zone to the south of Bouaké/Yamoussoukro in the case of Côte d'Ivoire. In contrast, there is a tendency to prefer dams in the northern Côte d'Ivoire where the rainfall is unstable although some 10,000 ha of paddy fields constructed with the technical cooperation of Taiwan at inland lowland with a river intake system in the 1960s are properly functioning near Korhogo in the north. The selection of an appropriate method based on a comprehensive judgement of the cost-benefit performance and ecological sustainability is necessary while also taking the total size of the catchment area, annual rainfall and rainfall pattern into consideration.

#### 4) Tractor, Oxen or Solely African Hoe?

The African hoe is the main tool for the WFP method and tractors are not used. There is a strong desire among farmers to use tractors to plow and level lowland paddy fields and farmers often pay for plowing by a tractor at a cost of US\$50-100/ha. The life span of a tractor is generally 4-5 years and the lifetime cultivation area greatly varies from 20 ha to 200 ha depending on maintenance. If a tractor is used to cultivate 100 ha, its sustainable use can be ensured given its current cost of US\$5,000. In this context, mechanization training centers, such as CFMAG, are increasingly important, though it is almost 10 years late.

In the case of the 1,000 ha Valley du Kou Project in Burkina Faso and the 50,000 ha Office du Niger Project in Mali, both of which are drier than Côte d'Ivoire, paddy fields are cultivated using a plow pulled by two oxen. It must be noted that long-lasting (10 years or more) extension and training by an animal traction training center or similar organization are required for this practice of using oxen to be established. In comparison, it is possible to produce skilled tractor operators through short, intensive training of one or two weeks.

### 5.5 International Cooperation in Rice Farming

#### (1) Japan's Cooperation

Table 5-6 lists the Japanese cooperation projects related to rice cultivation in Côte d'Ivoire since 1986. Other rice-related cooperation projects include the Food Security Support Project (1999-2002) providing a trust fund and rice aid for the Inland Valley Bottom Project (PBF) of WFP and the Improving Food Security in West Africa through the Increase in the Productivity of Rainfed Rice Systems (1999-2002), a joint research project of JIRCAS and WARDA (Figure 5-2). The components of the JIRCAS-WARDA cooperation project include the development of new upland rice varieties by means of cross-breeding between African varieties (*Oryza sativa*) and Asian varieties (*Oryza glaberrima*) and research to determine the socioeconomic conditions required for the extension of technologies by means of clarifying the roles of various systems and rural communities regarding land ownership, irrigation management and the marketing of products together with the current situation of rainfed lowland rice cultivation and the factors restricting rice production in West Africa.<sup>14</sup>

Table 5-7 shows the situation of rice cultivation by farmers visited by the Study Team in Côte d'Ivoire. All cases of rice cultivation in this table involve either direct or indirect assistance by Japan. The farmers engaged in upland rice cultivation have both started using NERICA varieties with ANADER's assistance while those in suburban Gagnoa and those in the north of Bouaké are participating in PVS and CBSS (a total of six farmers produce NERICA seeds on 1.5 ha of farmland), respectively. Those farmers involved in CBSS cited several reasons for their preference for NERICA, i.e., 1) easier avoidance of the risks posed by drought due to early maturity (90-100 days), 2) easier land preparation compared to lowland rice, 3) viability of direct sowing, 4) resistance to weeds, 5) anticipated higher yield compared to conventional upland rice varieties and 6) good flavor. Even though the initial investment is smaller in each of these cases compared to irrigated lowland rice, it is necessary to shift to a different site after one or two years, posing a question of sustainability, i.e. securing of fertile lands.

---

<sup>14</sup> JIRCAS, "International Agricultural Research Project: Rice Production in Africa, Summary", attached document dated May 30, 2000 provided by Dr. Hiroko Takagi, an international research coordinator of JIRCAS.

**Table 5-6 Japanese Cooperation Projects Related to Rice Cultivation in Côte d'Ivoire (since 1986)**

Scheme	Project Title	Period
Grant Aid	• Agricultural Mechanization Training Center Project	1988 – 1989
	• Irrigated Agriculture Development Project in the North-Central (Lokapli)	1997 – 1998
	• Grant Aid for the Increased of Food Production (Total: ¥5.25 billion)	1986 – 1999
Project-Type Technical Cooperation	• Irrigated Rice Farming Mechanization Training Project	1992 – 1997
	• PASEA: Phase I (Preparatory Phase)	2000 – 2002
	• PASEA: Phase II (Full-Scale Implementation Phase)	2002 – 2007
Development Study	• Study on the Agricultural Development Project in the Bu River Basin	1986 – 1991
	• Study on the Integrated Rural Development Project in the N'zi River Basin	1992 – 1994
	• Study on the Integrated Rural Development Project in the San-Pédro Plain	1998 – 1999

Sources: JICA, “Basic Design Study on the Irrigated Agriculture Development Project in the North-Central”, December, 1996; JICA, “Study on the Integrated Rural Development Project in the San-Pédro Plain: Final Report - Main Report”, March 1999; JICA, “Post-Project Evaluation Report for the Irrigated Rice Farming Mechanization Training Project”, July 1997; JICA, *Annual Report*, various issues. (All in Japanese)

**Table 5-7 Situation of Rice Cultivation by Farmers Visited by the Study Team in Côte d'Ivoire**

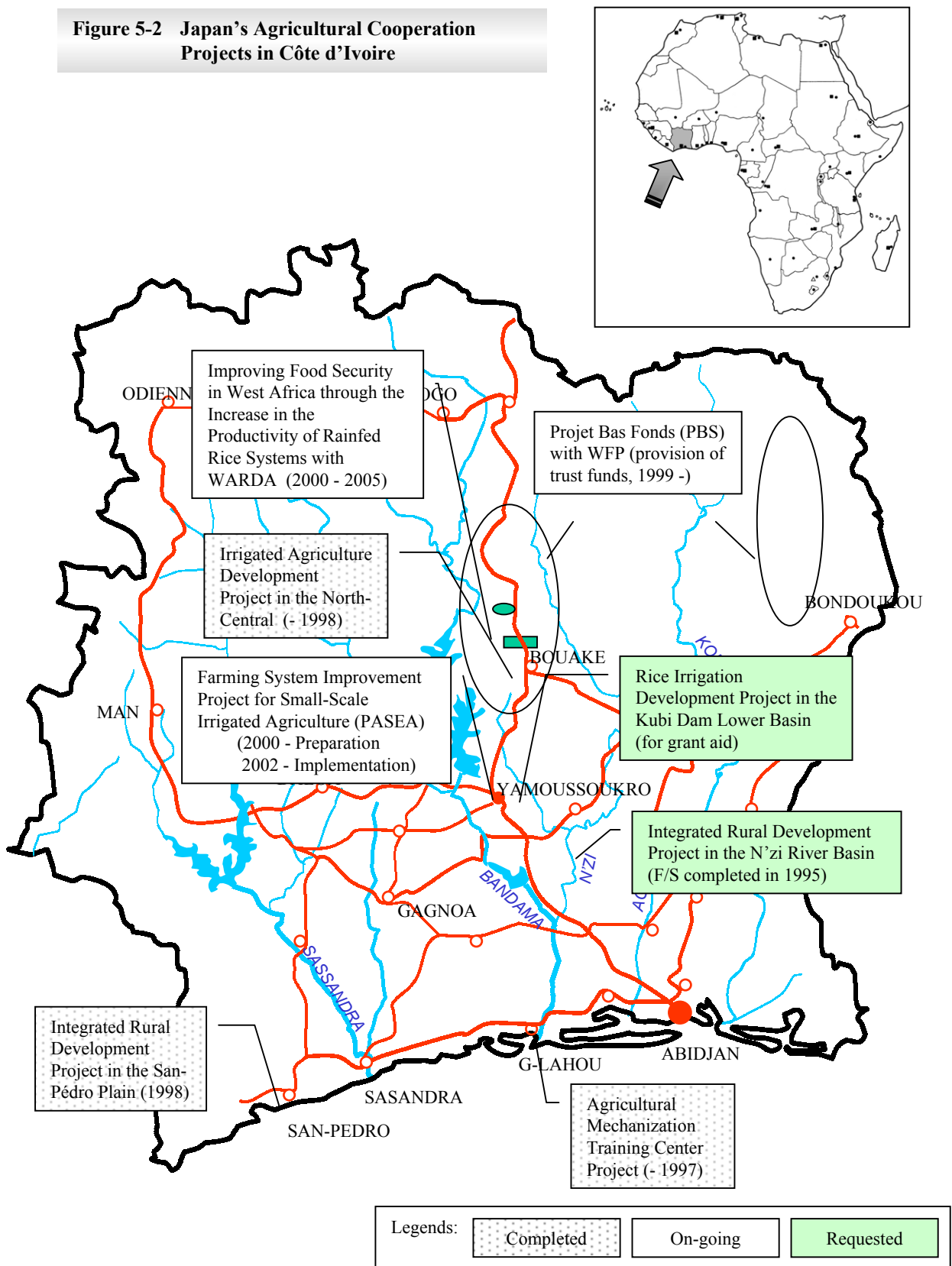
Location	Type of Rice Cultivation	Supporting/ Implementation Organization	Land preparation	Yield/Ha	Investment	Sustainability
Suburb of Gagnoa	Rainfed upland	WARDA/ANADER	Easy (manual)	Low (actual figure unknown)	Small	Shifting of location every 1-2 years
North of Bouaké	Rainfed upland	WARDA/ANADER	Easy (manual)	Less than 1 ton	Small	Shifting of location every 1-2 years
Lokapli	Irrigated lowland (dam)	JICA/PNR	Difficult (manual and tractor)	3.5 – 5.0 tons	Large	Low (funding and technology)
Suburb of Bouaké	Irrigated lowland (river)	WFP/ANADER	Difficult (manual and tractor)	Unknown (not yet harvested)	Medium	Unknown
Anongblin*	Irrigated lowland (stream)	Development by farmers	Difficult (tractor)	3.0 tons	Small	High (continued cultivation)

\* One of the model sites of PASEA assisted by JICA (45 km from Yamoussoukro).

Meanwhile, the Study Team also visited several irrigated lowland rice cultivation sites run by farmers. These were the site of the Irrigated Agriculture Development Project in the North-Central, where an irrigation system has been constructed with JICA's grant aid, three sites of PBF assisted by WFP since 1999 with the donation of rice by the Government of Japan and sites of PASEA, project-type technical cooperation of JICA (Phase I: March 2000 – September 2002; Phase II: five years from November 2002).

While the irrigated lowland at Lokapli has achieved a high yield (3.5-5.0 tons/ha) in a relatively consistent manner with the construction of a dam and water channels, there is a question of financial sustainability given the facts that grant aid of as much as ¥700 million (mainly covering the dam construction cost) was required for a beneficiary area of some 130 ha and that no water charge has been collected so far. Moreover, while the irrigation facilities are supposed to be maintained by the farmers based on the policy of the government, there has not been sufficient organization of nor assistance for farmers, presumably because of the lack of smooth collaboration between PNR as the implementation body and ANADER, which is responsible for extension. According to PNR, ANADER should be conducting extension and maintenance activities, but its commitment in these aspects has been insufficient. PNR is, therefore, currently demanding the appropriation of the budget for these purposes. There is also concern about technical sustainability. At present, the actual area planted is around 80 ha per crop out of the total planned area of 130 ha, indicting the high cost nature of the project.

**Figure 5-2 Japan's Agricultural Cooperation Projects in Côte d'Ivoire**



Source: Elaborated by the Study Team, based on a figure provided by Mr. Kohei Ajiro, Technical Advisor, Ministry of Agriculture and Animal Resources.

WFP's PBF is developing irrigated lowland (new development and rehabilitation) totaling 1,700 ha in four central and northern provinces under the Food for Work scheme (supply of 3 kg of rice in exchange for one day's labor).<sup>15</sup> For this project, Japan has contributed some US\$12 million and WFP has purchased some 8,000 tons of rice from Japanese government stock using part of this fund. In addition, AICAF provided technical assistance for the project until March 2000 in the form of the dispatch of experts. The main method of irrigation is water intake from rivers. However, the rehabilitation of dams is also carried out with WFP's assistance when appropriate. Compared to the Lokapli project, the development cost is low (around FCFA 700,000/ha for the river intake method, excluding the cost of rice aid; ¥1 = approximately FCFA 5) and this method appears to be promising in developing rice cultivation in the future. As the project has just started (full-scale commencement was not possible until March 2000 because of the political upheaval that occurred in December 1999), however, no data on the yield or production cost is available yet. Moreover, its sustainability after the termination of the Food for Work is unclear, though the Representatives of the WFP Côte d'Ivoire Office has said that Food for Work was provided only once for three months and that farmers are already continuing the project by their own efforts.

In the case of JICA-assisted PASEA, three model areas, i.e., urban-type without dam, urban-type with dam and rural-type with dam, were selected in Phase I and the demonstration of suitable planting techniques for irrigated farming system improvement is planned in Phase II, which was supposed to commence in November 2002. The Study Team visited irrigated paddy fields owned by a local farmer at Anongblin (45 km from Yamoussoukro) belonging to the urban-type without dam. The irrigation uses stream water flowing from the upstream and water channels constructed by the farmer. The latest harvest was 889 kg from 0.3 ha, which means a yield of approximately 3 tons/ha/crop. It is said that there is a problem in regard to water management in that flooding occurs after heavy rain because of increased inflow from the upstream via a drainage channel across a road. During the visit, the Study Team members were told that planting had been delayed because of a water shortage, though the seedlings were ready for transplanting. This farmer purchased by installments a hand tractor (power tiller) manufactured by Yammer Brazil that had been procured under the 2KR scheme with the technical assistance of a Japanese expert four years ago (estimated price: FCFA 3.5 million). The tractor had been playing an important role in continuous rice cultivation. Given the fact that the farmer uses the tractor to plow some 10 ha of paddy fields belonging to other farmers in one season, charging FCFA 65,000/ha, he should be able to save enough to replace it in 5-6 years' time.

## (2) Cooperation of Other Donors

Table 5-8 outlines the rice production development projects currently implemented by PNR with the assistance of donors other than Japan. The main features of these projects are the construction of dams and the development of paddy fields.

---

<sup>15</sup> Nagumo, F., "Hand-Made *Sawah* Field Development in Progress in Côte d'Ivoire, West Africa", *International Cooperation of Agriculture and Forestry*, Vol. 25, No. 4/5, July/August, 2002, pp. 42-50.

**Table 5-8 Rice Cultivation-Related Projects Implemented by PNR with Assistance of Donors  
(Other than Japan)**

	Project Title	Project Contents	Donor
1	Paddy Field Development Project in the N'zi River Basin	<ul style="list-style-type: none"> <li>• Construction of 2 dams</li> <li>• Development of 330 ha of farmland (80% for rice and 20% for vegetables)</li> <li>• Construction of 7 wells to supply drinking water</li> </ul>	BADEA <sup>1)</sup>
2	M'bahiakro Paddy Field Development Project	<ul style="list-style-type: none"> <li>• Construction of a water gates (?) and 2 dams</li> <li>• Development of 453 ha of farmland (80% for rice and 20% for vegetables)</li> <li>• Construction of 8 wells to supply drinking water</li> </ul>	Kuwaiti Funds
3	Bagoue Integrated Development Project	<ul style="list-style-type: none"> <li>• Rehabilitation of 2 dams and construction of a PFE<sup>2)</sup></li> <li>• Development of 620 ha of farmland (80% for rice and 20% for vegetables)</li> </ul>	BADEA <sup>1)</sup>
4	PL480 Agricultural Program	<ul style="list-style-type: none"> <li>• Construction of water supply infrastructure (dam or PFE)</li> <li>• Development of 1,400 ha of farmland (80% for rice and 20% for vegetables)</li> </ul>	USA
5	Project Riz Central (PRC)	<ul style="list-style-type: none"> <li>• Rehabilitation of 17 dams and 3 PFEs</li> <li>• Development of 1,277 ha of paddy fields</li> </ul>	EU
6	Farmland Development Project in the North-West (900 ha)	<ul style="list-style-type: none"> <li>• Phase I: feasibility study to identify 9 sites for dam construction and farmland development</li> </ul>	BADEA <sup>1)</sup>
7	Farmland Development Project in the West-Central (1,600 ha)	<ul style="list-style-type: none"> <li>• Construction of 15 dams</li> <li>• Development of 1,600 ha of farmland (80% for rice and 20% for vegetables)</li> </ul>	BADEA <sup>1)/</sup> Kuwaiti Funds
8	Integrated Rural Development Project in the San-Pédro Plain	<ul style="list-style-type: none"> <li>• Feasibility study on sites at Fahe and Campement Colonel for development of 1,300 ha of paddy fields</li> </ul>	Kuwaiti Funds

Notes: 1) BADEA: Arab Bank for Economic Development in Africa

2) PFE: small river intake system

Source: PNR

## **5.6 Japan's Possible Cooperation in Rice Farming**

### **(1) Fact-Finding Survey and Development of Statistical Data**

A fact-finding survey and a remote sensing survey should be conducted in combination based on a contract with a Japanese research organization or consultant while ensuring the compatibility of the data with existing data through close cooperation with WARDA.

### **(2) Support for ARI**

Technical support should be rendered to ARI for increased seed production by dispatching an agronomist (e.g., of AICAF), a coordinator, and/or an adviser. The coordinator should be not only engaged in extension activities for NERICA varieties but should also provide advice on the sustainable development of inland valley bottoms to improve soil and water management.

### **(3) Support to NARES and IFDC**

Training should be provided to strengthen the rice production programs/projects and the development of soil fertility management technologies at WARDA and IFDC. Financial contribution should be made to promote research and development in such fields as breeding,

crops, soil and fertilizer, irrigation, water management, extension and statistics. Training in Asian countries should also be supported.

(4) WFP/Participatory Low Cost Sustainable Development of Inland Valley Bottoms/  
JICA/2KR/Advisor

A coordinator/advisor should be dispatched (to WFP, ANADER or PASEA) to ensure the continuous implementation of the WFP method, to support PASEA, to expand the scope of 2KR (including the training of seed production technicians and support for equipment production) and to coordinate these support. AICAF and other organizations that can provide technical assistance should be utilized to support the cultivation of NERICA varieties.

(5) Support for Technical Improvement and Cost Reduction of Processing and Marketing

- 1) Technical assistance for the development and extension of low cost threshers and mills, the construction of storage facilities, etc. (by means of demonstration, training and advice by experts, etc.)
- 2) Spread of the use of dryers, threshers, etc. using 2KR (establishment of a promotion system such as sale on credit)
- 3) Support for the processing and marketing activities of farmers groups
- 4) Support for the development of farm-to-market roads
- 5) Support for the improvement of market information services of the government

## CHAPTER 6 CASE STUDY 2: RICE FARMING IN GUINEA

### 6.1 Political and Economic Conditions and Agriculture

Guinea is called the water jug of West Africa and enjoys a very high level of annual rainfall among African countries. Its central highlands and mountainous areas constitute the headwater areas for many rivers, including Niger River, Senegal River and Gambia River. The country is also endowed with rich mineral resources, such as bauxite (one-third of the world's confirmed reserves), diamonds and gold. Sekou Touré, Guinea's first president following its independence from France, its suzerain power, in 1958 requested assistance from the Soviet Union to sever its ties with France and adopted socialist policies, resulting in the stagnation of economic activities. The current president, Lansana Conte, who took over the political leadership in a bloodless coup d'état in 1984 has since been promoting a shift from the former socialist system to a market economy with the assistance of such international organizations as IMF and the World Bank. The ambitious structural adjustment program has led to a gradual but steady recovery of the economy as illustrated by mean annual economic growth of 4.3% between 1990 and 2000.<sup>1</sup> Despite a bloody demonstration by soldiers (an unsuccessful coup d'état attempt), in December 1996, the political situation has been relatively stable since the re-election of President Conte in December 1998 (Appendix 4).

Agriculture is Guinea's key industry, accounting for 80% of the working population and 24% of the GDP. The main food crops are rice, fonio, maize, millet, sorghum, peanuts and cassava, but rice is particularly important as the main staple food. Unlike the first political regime in Côte d'Ivoire after independence, the first political regime in Guinea (1958-1984) imposed a heavy tax on agriculture and provided hardly any assistance for the development and extension of agricultural technologies/techniques and improvement of infrastructure. As a result, the agricultural sector stagnated and food imports, mainly rice, rapidly increased in the 1980s. However, the liberalization of the economy since the late 1990s has stimulated the agricultural sector and domestic rice production has been showing an increasing trend (Figure 6-1).

### 6.2 Trends of Rice Supply and Demand

The present regime emphasizes the promotion of rice cultivation to achieve a self-sufficient rice supply utilizing its rich water resources. According to FAO statistics, while the rice import volume slightly declined at the end of the 1990s, a large volume of rice was still imported in 2000 and 2001, partly because of the adverse impacts of a boundary dispute with Sierra Leone and Liberia (Figure 6-1). One reason for Guinea's failure to increase its rice self-sufficiency rate despite the relatively favorable climatic and ecological conditions for agriculture compared to other West African countries is that the yield of rice of 1.5 tons/ha represents the lowest level among major rice producing countries in West Africa.<sup>2</sup> It has been pointed out that the factors responsible for the low yield are declining natural soil fertility, low input use, poor seed quality, and poor husbandry practices.<sup>3</sup> These are very important

---

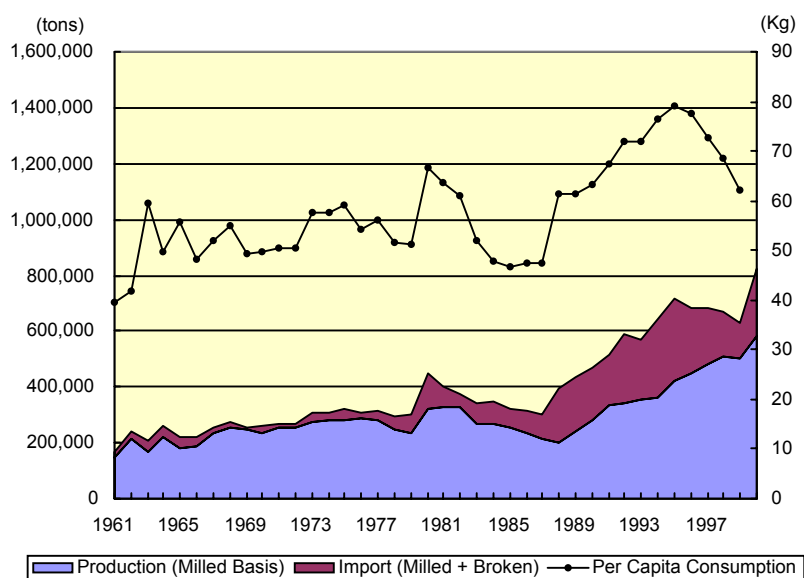
<sup>1</sup> World Bank Group, Guinea at a Glance, (<http://www.worldbank.org/data/>), September 21, 2001.

<sup>2</sup> FAOSTAT Database (<http://apps.fao.org/>).

<sup>3</sup> World Bank, Staff Appraisal Report, Republic of Guinea: National Agricultural Services Project, March 12, 1996, p. 1. Regarding these problems, Dr. Tareke Berhe, Country Director for SG2000/Guinea has indicated



issues to be dealt with for an increased production of rice even though they are equally applicable to other crops in Guinea.



**Figure 6-1 Trends of Rice Production and Import in Guinea (Milled Basis, 1961 – 2000)**

Data Source: FAOSTAT Database (<http://apps.fao.org/>).

It is believed that the acquisition of statistics and information on rice (and other crops) is much harder in Guinea than Côte d’Ivoire. Because of few Japanese cooperation projects in the past and the very short visit by the present Study Team, it is impossible to assess the actual situation of information availability. Nevertheless, statistical data and other types of information are crucial as the basis for the formulation of agricultural development strategies and projects by the Government of Guinea and also for Japanese cooperation for such strategies and projects. When this issue was raised at a meeting with the Minister of Agriculture and Livestock on the final day of the country visit, the Study Team was told that FAO would provide cooperation for the development of statistics in the coming years. It should also be possible for Japan to provide cooperation for the development of wider-ranging agricultural statistics not limited to rice production.

### 6.3 Rice Farming-Related Administration and Agricultural Support Services

In Guinea, the Ministry of Agriculture and Livestock Husbandry (MAE) is responsible for rice farming policies and support services. The main roles of MAE are (i) to direct and facilitate development activities in both the public and private sectors, (ii) to contribute to technical support to producers, (iii) to facilitate the creation of groups (organizations) in rural areas and (iv) to ensure the implementation of the existing regulations, particularly those aimed at the conservation of natural resources and productive heritage.<sup>4</sup> The activities of MAE have been reorganized in line with the government’s liberalization and decentralization

---

similar problems (in a fax sent by Mr. Minagawa, Secretary of the Tokyo Office, Sasakawa Africa Association dated June 17, 2002).

<sup>4</sup> Republic of Guinea, Ministry of Agriculture and Livestock Husbandry, Service National de la Promotion Rural et de la Vulgarisation (SNPRV), “Multiplication and Diffusion of Community-Based Seeds of NERICA Rices Developed by WARDA”, 2001, p. 10.

policies and its main functions are (i) technical support for improvement of the management and technical capabilities of producers, (ii) promotion of rural activities to support the establishment of a framework to develop and facilitate private sector initiatives, (iii) development of human resources to create an effective structure and (iv) strengthening of communication facilities.

With the implementation of measures proposed by the Second Letter of Agricultural Development Policy (LPDA2), the production environment for agriculture in Guinea has much improved compared to the period of a centrally controlled economy and actual production has substantially increased. In the institutional aspect, LPDA2 has the effect of strengthening the support system for rural areas. In addition, MAE has already implemented a pilot training project to establish enterprises under the National Agricultural Service Project (PNASA) assisted by the World Bank.

The National Rural Development and Agricultural Extension Service (SNPRV) plays a central role in the provision of technical support to agricultural producers. The mission of SNPRV is to contribute to the improvement of agricultural production and productivity at the farm level through the training and improved awareness of farmers. The activities of SNPRV have already covered 1,544 districts out of the total of 2,172.<sup>5</sup>

For the extension of NERICA varieties, SNPRV is responsible for the coordination of CBSS. The Guinea Office of the Sasakawa Global 2000 (SG2000), which emphasizes extension activities in rural areas, has been assisting SNPRV since 1996 to strengthen the latter's organization and activities as described in Section 6.5.

The Agricultural Research Institute (IRAG) conducts agricultural research in Guinea and its mission is to expand and improve agricultural production and processing by sustainable methods. Its more concrete roles include the training of extension workers, preparation of a catalogue of varieties and the supply of breeder seeds.

## **6.4 Technological and Environmental Problems on Rice Cultivation**

### **(1) Sustainable Farming System (*Tabade* System)**

During the field trip, the Study Team observed the operation of the *tabade* system by the Peuhl (Fulbe) people near Labe in the Guinea Highland. NERICA varieties were excellently growing (yield of as high as 3 tons/ha) in the fields cultivated by nearly perfect soil and water conservation measures. Those fields are surrounded by large ridges, where various crops are planted, and receive sufficient fertilizer in the form of animal manure produced by grazing and leguminous plants. Fonio, vegetables, potatoes and rice (NERICA varieties and others) are cultivated in rotation. Under the *tabade* system, the agricultural land has developed to a comparable level with farms in Europe and the United States and no other places in West Africa approach this level of soil conservation measures for continued cultivation. The only exceptions are probably some vegetable producing areas at Kano/Zaria/Sokoto by Hausa and Fulbe people in Nigeria, where a system similar to *tabade* can be observed. No comparable rice producing areas are believed to exist in West Africa.

---

<sup>5</sup> Republic of Guinea, Ministry of Agriculture and Livestock Husbandry, op. cit., p. 10.

## (2) Expansion of Degraded Farmland due to Slash and Burn Upland Rice Cultivation

The Study Team flew from Conakry to the northwestern highland city of Labe by chartered aircraft. Areas along the straight flight path of some 300km comprised grassland of true grasses, including alang-alang. Although some trees remain, hardly any forest areas were observed. Artificial savannization, which is the stage leading to desertification, was observed to spread over a wide area. In the last 10 years, a large number of refugees have crossed the border to Guinea to escape civil war in Liberia and Sierra Leone and these refugees have had no choice but to conduct slash and burn upland rice cultivation to obtain food. The urgent provision of aid (2KR and others) appears to be necessary to prevent the degradation of farmland and the destruction of forests by refugees.

## (3) Necessity for Comprehensive Approach Combining Promotion of Rice Cultivation and Environmental Conservation

Comprehensive development involving forestry, agroforestry, lowland *sawah* field development, fishponds, etc. and the implementation of a pilot environmental conservation project appear to be effective for the rehabilitation of degraded catchment areas of more than several million ha where ironstone is exposed as a result of past slash and burn shifting cultivation.

In the past, assistance for lowland *sawah*-based farming techniques was provided by North Korea because of the close relationship between Sekou Touré, the first president of Guinea, and Chairman Kim Il Sung of North Korea. However, recent years have seen little assistance by North Korea because of the economic and food crises of the country. As a result, it appears that lowland *sawah* field development is being voluntarily conducted by farmers, though their varieties, cultivation techniques, especially fertilizer application, and water management are all extremely inferior. The collaboration with OISCA (Organization for Industrial, Spiritual and Cultural Advancement)-International, whose activities are primarily based in Asia, may be a good idea to support lowland *sawah* rice cultivation in Guinea. Here, support for R&D, education, training and extension in a comprehensive manner by the relevant research/development/extension centers should prove effective.

As Guinea produced Sekou Touré, a leader of the Organization of African Unity, and is a politically important country in West Africa for Japan (embodying the African ideal of “We prefer poverty in liberty to riches in slavery.”), a properly planned study should be conducted. An advisor on agricultural policies should be dispatched to Guinea to formulate measures jointly with the Government of Guinea for Japan to contribute to the comprehensive promotion of agriculture, forestry and fisheries and environmental conservation. As in the case of Côte d’Ivoire, statistical data on rice should be developed by all available means, including the remote sensing technology and surveys on the ecology of rice cultivation and on soil degradation due to the slash and burn cultivation. Once such reliable data is made available, a comprehensive survey should be conducted to formulate a medium to long-term rice cultivation strategy as well as an environmental conservation strategy. Although SG2000 is currently providing assistance for rice cultivation in Guinea, it may well be the time for the preparatory work to commence bilateral, government-to-government assistance.

## 6.5 International Cooperation in Rice Farming

The World Bank, UNDP, WFP, WARDA and international NGOs, etc. are currently providing assistance for rice cultivation-related fields in Guinea. Among the various cooperation activities, those of SG2000 to promote rice cultivation are the most important and are outlined below.

The SG2000 project in Guinea commenced in 1996, mainly to assist SNPRV, and agricultural extension and other activities have been implemented with funding of US\$2.72 million so far by the Sasakawa Africa Association based in Tokyo. In conducting its activities, SG2000 has enlisted many Guinean partners, such as IRAG, the National Agricultural Department, three national agricultural and animal husbandry colleges (Tolo, Bordo and Macenta) and the University of Farana as well as SNPRV in the public sector and also such international organizations as the World Bank, WARDA and IITA. The activities conducted by SG2000 in the period from 1996 to 2001 are listed below.<sup>6</sup>

- 1) Human resources development (OJT for extension workers and farmers, support to senior government officials and technical staff to attend international conferences and to make field visits, post-graduate training for graduates of agricultural colleges, etc.)
- 2) Demonstration of improved crop cultivation technologies/techniques at farming sites (experiments and demonstration at more than 10,000 sites, direct guidance for 21,000 farmers in 33 prefectures in eight regions, distribution of 150 tons of improved seeds and 800 tons of chemical fertilizer, assistance for farmers to increase the yield, manufacture of post-harvest and processing machines, construction of storage facilities, export of improved seeds to neighboring countries, etc.)
- 3) Institutional capacity building (intensification of the activities of regional extension offices through the provision of motorcycles and office desks, assistance for agricultural experiment stations, assistance for agricultural colleges and universities, partnerships with local NGOs, etc.)
- 4) Production and distribution of seeds (production and distribution of improved seeds of rice, maize, peanuts, cassava and cow peas, etc., import of high protein maize, soybeans and arrowroot seeds, multiplication of new rice varieties developed by WARDA, etc.)
- 5) Post-harvest and agro-processing (technical training, invitation of IITA/SSA experts, extension of food processing technologies, import/manufacture of post-harvest and agro-processing machines, etc.)
- 6) Support for the activities of women's groups (provision of small farming tools, credit facilities for inputs, adult literacy education, technical guidance on agro-processing, etc.)
- 7) Provision of incentives (issue of certificates, commendation, provision of prizes, scholarships, farming tools/equipment, etc.)

---

<sup>6</sup> SG2000/Guinea, Executive Summary.

- 8) Raising of awareness and provision of information on agriculture using radio, television, newspapers, etc.

Accompanied by staff members of SG2000 and SNPRV and senior government officials relating to agriculture, the Study Team visited the Fouta Djallon area in August 26-27, 2002 and observed some of the above-listed activities of SG2000/Guinea. Although it was somewhat difficult to interview local people because of the large number of participants in the field trip, the general impression was that diverse activities are being conducted at a low cost and with the effective mobilization of government officials and local people. In regard to the achievements of seed multiplication and extension of NERICA varieties, which are most emphasized by SG2000/Guinea at present, a proper judgement could not be made because of their comments that the site visited was not the best site for such observation in Guinea. However, it should be possible for JICA and other Japanese organizations to provide cooperation for rice cultivation in collaboration with SG2000/Guinea in the future.

## **6.6 Japan's Possible Cooperation in Rice Farming**

### **(1) Fact-Finding Survey and Development of Statistical Data**

As described in Chapter 5, a fact-finding survey and a remote sensing survey should be conducted in combination based on a contract with WARDA, a Japanese research organization or a consultant. The development of a domestic organization in Guinea, which is capable of conducting such surveys and developing reliable data as routine work, is also important.

### **(2) Support for ARI**

As in the case of Côte d'Ivoire, the dispatch of an agronomist/coordinator/advisor(s) should be considered while coordinating such donors as Japan, the World Bank, FAO, ADB, Canada, Winrock International and others. This coordinator should be not only engaged in extension activities for NERICA varieties but should also provide guidance on the sustainable development of lowland *sawah*-based rice cultivation in inland valley bottoms to improve the soil and water management levels.

### **(3) Support to NARES and IFDC**

Training should be provided to strengthen the rice production programs/projects and the development of soil fertility management technologies at WARDA and IFDC. Financial contribution should be made to promote research and development in such fields as breeding, crops, soil and fertilizer, irrigation, water management, extension and statistics. Training in Asian countries should also be supported.

### **(4) WFP/Participatory Low Cost Sustainable Development of Inland Valley Bottoms**

There should be effective linkage between 2KR, development projects and dispatch of an advisor. Support for the inland valley bottom farming method (an achievement of JICA's research cooperation) should be provided by the one-coordinator method while establishing

linkage with 2KR. It should also be implemented through collaboration with Côte d'Ivoire to make the best use of WFP's experience in the Food-for-Work program.

(5) Support for Technical Improvement and Cost Reduction of Processing and Marketing

As in the case of Côte d'Ivoire, support should be provided for the development and extension of low cost rice threshers and mills, construction of storage facilities, processing and marketing activities of farmers groups, development of farm-to-market roads and improvement of market information services.

(6) Follow-Ups for Activities of SG2000

Based on the achievements of SG2000, JICA should provide cooperation for rice cultivation in Guinea in collaboration with SG2000.

## CHAPTER 7 RECOMMENDATIONS FOR COOPERATION IN RICE FARMING IN WEST AFRICA

### 7.1 Policy Change from Emphasis on Export Crops to Emphasis on Food Production

- (1) African countries at the time of their independence in the 1960s were marked by a higher standard in almost every social and economic aspect than Asian countries. In Asia, however, new IR varieties were developed around 1966. “The policy of giving top priority to self-sufficient rice production” accompanied by fertilizer and irrigation in Asia was successful, building the foundation for the economic revival described as “the miracle of East Asia” from the 1980s to the 1990s.
- (2) It is not entirely true that a similar policy has never been implemented in Africa. In the case of Côte d’Ivoire, for example, more than 10 irrigation projects were completed in the early 1970s and self-sufficiency in rice was achieved for two years, partly because of the provision of subsidized fertilizers. Ninety-nine (99) percent of the irrigation projects completed with the assistance of donors from 1972 to 1993 aimed at rice production. After this period, the country relied upon imported rice because of the low price of rice, absence of operation and maintenance of infrastructure by farmers and the economic crisis in the 1980s. An extensive study conducted by Stanford University in 1978 at the request of WARDA concluded “rice is economically unsuitable” in all West African countries except Mali and Sierra Leone. WARDA commenced full-scale research riding on the wave of the “devaluation of FCFA” and the “price rise of rice” in the mid-1990s and has recently managed to develop NERICA varieties.
- (3) One major difference between Africa and Asia in terms of agriculture is that export crops have been the mainstay of African agriculture. There may be something wrong in the development strategy of African countries that have treated agriculture, including food production, as part of private business undertakings, while depending on food provided by Europe and the United States at a low price. One fact stands out in this context: 74% of the ODA in 1999 went to education, health, peace, governance and debt relief while only 7% went to the agricultural sector. Historically speaking, every country that has achieved rapid economic development gave high priority to food self-sufficiency at the early stage without exception. Examples of countries/regions that have primarily emphasized agricultural (food) production include the Wild West in the United States (the average growth rate of the agricultural sector from 1867 to 1900 was 2.7%/year), Japan (1.9%/year from 1950 to 1968), 15 Asian countries, excluding Japan and China, (3.1%/year from 1965 to 1974) and China (3.6%/year from 1964 to 1985). There should be a strategic change in Africa in the 21st Century to give the highest priority to “food producing agriculture”.

### 7.2 Comparative Advantages and Problems of Rice

- (1) The reason why Asia with 30% of the world’s permanent farmland can afford to feed 60% of the world’s population is the far higher productivity of rice production, the staple food in Asia, than that of other grains and potatoes. The world average yield of rice

from 1999 to 2001 was 3.9 tons/ha, 1.4 times higher than the 2.7 tons/ha for wheat.<sup>1</sup> As the double-cropping of rice is possible (world average: 1.3 crops/year), the ability of rice to support the population per unit area is 1.8 times higher (1.4 x 1.3) than wheat. This advantage of rice is also apparent in Africa as shown in Table 7-1, where the yield of maize is 70-80% of the yield of rice. The average yield of grains, excluding rice, is half of that of rice.

**Table 7-1 Comparison of Yields of Main Grains Produced in Africa (1999-2015)**

	Rice		Maize		Sorghum		Millet		Other Grains		Average for All Grains Except Rice	
	1998	2015	1998	2015	1998	2015	1998	2015	1998	2015	1998	2015
West Africa	1.6	2.1	1.3	1.5	0.9	1.1	0.7	1.0	0.7	0.8	0.9	1.1
Sub-Saharan Africa	1.6	2.1	1.3	1.6	0.8	1.1	0.7	0.9	0.8	1.0	0.9	1.1
Ratio to Rice (Rice = 100)	100	100	81	71	56	52	44	48	44	38	56	52

Source: Obtained during a visit to Global Perspective Studies Unit, Economic and Social Department (in charge of preparing *World Agriculture: Towards 2015/2030*), FAO on August 13, 2002.

- (2) Moreover, rice is superior to other grains in terms of its nutritional value, easy cooking and storability. These are the main reasons for the rapidly increasing demand for rice in recent years, particularly in West Africa. When the form of cultivation advances to lowland rice cultivation, there will be an additional environmental advantage of sustainable production.
- (3) However, rice has also problems. The yield may drop to the same level or even lower than the yield of other grains when it does not rain for some time in areas where the annual rainfall is less than 1,000 mm. When excessive fertilizer is applied to achieve a higher yield, the costs will be wasted and the negative impacts of fertilizer may increase. In rainfed paddy fields with a certain degree of standing water, there are risks of malaria and other water-borne diseases. There can also be conflict between farmers over scarce water. These potential hazards cause so much concern for farmers that they may think that the cultivation of grains other than rice is a safer option even if the harvest is smaller.

### 7.3 Medium to Long-Term Viewpoint for Rice Farming in West Africa

- (1) The above arguments suggest that the biggest significance of the development of NERICA varieties (upland rice) places Africa at the starting point for increased food production. What is needed is the medium to long-term viewpoint adopted by the Johannesburg summit to simultaneously achieve three targets, i.e., “sustainable development”, “rectification of the gap between the rich and poor” and “economic growth”. As described in 7.1-(3), any positive progress towards self-sufficiency in food cannot be achieved without continual efforts. All of the American and Asian precedents took 20-30 years to achieve positive results. Even if Africa can refer to the past results of the forerunners, it appears essential for Africa to adopt at least a long-term viewpoint leading to the Millennium Development Goals by 2015.

<sup>1</sup> FAOSTAT (<http://apps.fao.org/>).



- (2) Using the research results (development of NERICA varieties for upland rice cultivation) up to the present, WARDA has already started efforts to develop new NERICA varieties for rainfed lowland and irrigated lowland. At the same time, WARDA has initiated the ARI pilot project (2002-2006) to prepare extension and technical guidelines for farmers. It plans to expand the original budget of US\$15 million covering seven countries to US\$75.3 million with a possible increase of the number of pilot countries. It also intends to facilitate research on the development of new varieties and the extension of water management technologies with emphasis on lowland that offers large development potential from the viewpoint of increased rice production, illustrating an important strategic change towards lowland rice cultivation. In accordance with this new strategy of WARDA, the Study Team proposes that a foundation for the increased rice production, mainly featuring lowland, should be built, setting the five year period from 2002 to 2006 as the medium-term plan period. Here, the term “foundation” means “a system required to put an increased rice production plan incorporating research, extension, marketing and distribution, etc. on track. To be more concrete, it includes all of the items referred to in 7.5-(2). The nine-year period from 2007 to 2015 will then become the long-term plan period for the implementation of full-scale efforts, including infrastructure improvement, to achieve increased production. FAO should reinforce its efforts to establish a sustainable cultivation system during the above-mentioned medium-term plan period.
- (3) While there are some successful small-scale irrigation projects using Asian rice varieties (see Section 4.2 in Chapter 4), NERICA has its strong points in terms of weed resistance and taste. These two types of rice can co-exist in West Africa.
- (4) The most important point is how to raise the necessary funds. As mentioned in Section 2.2-(3), FAO calculates that US\$240 billion will be required by 2015 for the first step to achieve NEPAD’s objectives. This translates to a huge annual spending of US\$17.2 billion, which is more than 15 times greater than the total agricultural budget of ODA in 1999 (US\$1.1 billion). Even if the 0.7% (of the GDP) target for ODA of the G8 is fulfilled, it will not be sufficient. What is now required is for African countries to adopt a medium to long-term viewpoint for fund raising in which they will independently secure their own budgets and stimulate private investment and trade to raise the necessary funds.

#### **7.4 Implementation of Recommendations in Final Report of Second ODA Reform Forum**

- (1) The Second ODA Reform Forum (chaired by Dr. Toshio Watanabe, Dean of the Faculty of International Development, Takushoku University) established as a private consultation body for the Minister of Foreign Affairs in May 2001 was followed by ODA Town Meetings at four locations in Japan. At the end of March 2002, the Forum compiled its Final Report, taking external opinions into consideration, and submitted the report to Foreign Minister Yoriko Kawaguchi. The recommendations are essentially summarized in three key phrases, i.e., “participation of the people”, “assured transparency” and “improved efficiency”. There is now a strong need to transform Japan’s ODA in line with these phrases to make it more efficient and acceptable to the Japanese public in order to achieve the goal of “rice farming in West Africa” to which Japan has been a key ODA provider.

- (2) Firstly, Japan's ODA must be the total culmination of the heart, intelligence and vitality of its people. One potential of the effective use of existing resources and skills relates to the presence of several hundred Japan Overseas Cooperative Volunteers (JOCVs) who have assisted rural development in Africa. There is a strong case to appeal to former JOCVs who have first-hand knowledge of local conditions in French-speaking African countries with a view to their re-dispatch. It is obvious that the knowledge and vitality of these people will prove to be invaluable in the field of grassroots extension activities which Japan has not been particularly good at.
- (3) Secondly, ODA must be provided in a prioritized and effective manner with a firm strategy. As the command tower for ODA, the Strategic ODA Council chaired by the Minister of Foreign Affairs has now been established as a permanent body to discuss the basic policies and priorities of ODA and also to actively pursue international collaboration. Viable measures for such international collaboration include the entrusting of assistance for priority fields in individual countries, of which Japan alone could find the implementation difficult, to international organizations and NGOs with rich relevant experience. Some examples are to entrust assistance for technology and the procurement of fertilizer for NERICA varieties to IFDC (based in the United States with an African branch located in Togo), which has accumulated relevant experience in Bangladesh, Albania, Kosovo, etc.,<sup>2</sup> and to collaborate with WFP, which has successfully developed participatory small-scale irrigation facilities at a low cost by the Food for Work method in Côte d'Ivoire, and the SG2000 (an international NGO based in Switzerland), which has been making a major contribution to the NERICA rice extension project in Guinea together with the Government of Guinea. If cooperation involving these organizations can be established by the end of the medium-term plan (2002-2006) at the latest, many difficulties in the extension of NERICA varieties will have been overcome. Meanwhile, FAO should try to establish and extend cultivation techniques for NERICA varieties through its Special Programme for Food Security (SPFS).
- (4) Thirdly, the ODA implementation system should be fundamentally reorganized. It is necessary to strengthen the linkage between grant aid, technical cooperation, loans, etc. JICA projects such as CFMAG and PASEA currently in progress in Côte d'Ivoire should be implemented as pioneer projects that allow the substantial transfer of decision-making to the field staff.
- (5) Finally, the objectives of Japanese ODA should be clearly defined. It is important for Japan to provide assistance that is highly appreciated in the international community and such assistance will lead to the achievement of the national interests of Japan. For this purpose, it will be essential for the collective will of all related persons in Japan to be the basis for policy formulation and implementation. Fortunately, the Study Group of the present Study includes representatives of the Ministry of Foreign Affairs, Ministry of Agriculture, Forestry and Fisheries, JICA, JIRCAS, JBIC, FAO, WFP, Sasakawa Africa Association, AICAF, IDCJ, International Development Journal, Asahi Shimbun, Yomiuri Shimbun and various universities, who have made many useful contributions.

---

<sup>2</sup> See Appendix 2: Proposal for Technical Cooperation of IFDC with JICA. IFDC has proposed a three-year plan (2003-2005) to ARI to ensure the most effective implementation of training on the technology and procurement of fertilizer.

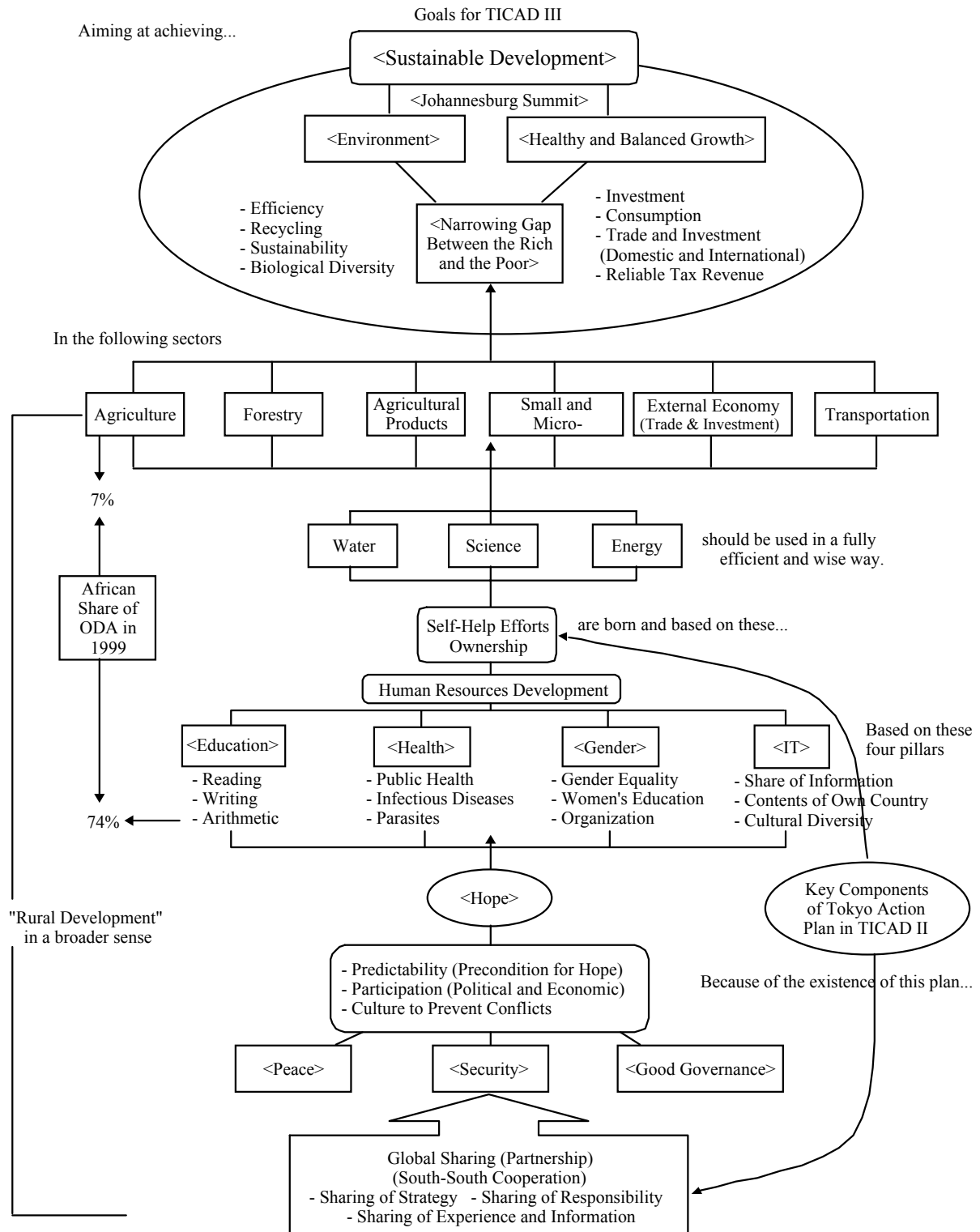
- (6) Amount of Japan's ODA for Africa: At present, some 10% of Japan's ODA goes to Africa, totaling US\$1 billion/year. Grant aid accounts for 70% of Japan's ODA for Africa while technical cooperation and loans account for 22% and 8%, respectively. As the agriculture, forestry and fisheries sectors receive 25%, Japan's annual ODA for these sectors is approximately US\$250 million. There are several alternatives in regard to "how to use this sum for rural development in Africa". Assuming that half is used for increased food production and half of that half (i.e., one-quarter of the original sum) is used for rice cultivation in West Africa, some US\$60 million a year could be allocated to rice farming in West Africa. While the funds required to support the ongoing research cooperation with WARDA (including the UNDP portion) and to support the extension activities described in (2) through (5) above should form part of this amount, at least the same amount can be provided without much difficulty during the medium-term plan period. The effective use of such financial assistance will obviously be further achieved through collaboration with other donors, including the World Bank, FAO, AfDB, EU and USAID.

## **7.5 Japan's Step-wise Cooperation Strategy for Rice Farming in West Africa**

- (1) From NEPAD to TICAD III: As NEPAD was the answer to the theme of homework on "African ownership" given by TICAD II, it is appropriate for the preparatory work under TICAD III to proceed with comments on and improvement of NEPAD. The biggest shortcoming of NEPAD (first version) issued in October 2001 was its inheritance of "thinking in the 20th Century" pointed out in Section 2.1. To be more precise, it still allowed an imbalance of distribution of 74% of ODA funding in 1999 to education and health, etc. and only 7% to agriculture, because of the "bias towards human development". Even though NEPAD is based on the TICAD II Tokyo Action Plan as shown in the next page, there is too much imbalance within the framework of "rural development in a broader sense". The NEPAD Action Program announced by the NEPAD Secretariat in July 2002 upgrades the ranking of agriculture from the fourth in the first version of NEPAD (① infrastructure, ② education, ③ health and ④ agriculture) to the top (① agriculture and markets, ② education and health, ③ infrastructure and ④ environment). The present Study proposes that at least about 20% of ODA should be allocated to these four priority sectors, respectively, in TICAD III.
- (2) Medium-term plan period for rice cultivation in West Africa (2002-2006): Technical and institutional foundations should be established through the implementation of the following items.
- 1) Establishment of a clear understanding of the diverse realities of rice cultivation in West African countries and the development of statistics for the formulation of a long-term plan
  - 2) Continuation of the WARDA-JIRCAS research cooperation project as Phase III (2003-) with special emphasis on NERICA varieties for rainfed and irrigated lowlands
  - 3) For upland NERICA, the introduction of measures to develop infrastructure at low costs and to minimize environmental destruction
  - 4) Entrusting of technical cooperation for fertilizer procurement (2003-2005) to IFDC (see Appendix 2)

- 5) Dispatch of advisors to NARES in pilot countries to assist ARI
  - 6) Development of technical cooperation with closer links with WFP, SG2000, FAO, AICAF, etc.
  - 7) Increase of the flexibility of JICA's cooperation by expanding the decision-making power of representative offices
  - 8) Expansion of technical cooperation by sending former JOCVs who have knowledge about and work experience in African agriculture
  - 9) Technical cooperation to improve the processing and marketing of agricultural products, particularly rice
- (3) A long-term plan for rural development in Africa (2007-2015) should include the development of infrastructure necessary for rural development (food security, environmental conservation and a reduced gap between the rich and the poor) in Central, East and Southern Africa, in addition to the 17 West African countries, to achieve the Millennium Goals by 2015. While the required amount of funding is expected to be huge because of the infrastructure development, the details should be determined depending on the degree of completion of the medium-term plan. Not only ODA equivalent to 0.7% of G8 donors' GNP, but also global cooperation through funding by the World Bank, IMF, AfDB, JBIC, EU, USAID, WTO, etc. and the mobilization of developing countries' savings, trade surpluses and private investments is essential. It is hoped that we will witness these goals' realization in 2012, the 10th year after WSSD.

## In Pursuit of Improvement from TICAD II to TICAD III



Source: General Foreign Policy Bureau, Ministry of Foreign Affairs, appended by the Study Team.

## **APPENDIXES**

## Appendix 1: People Interviewed

### 1. United Nations Food and Agriculture Organization (FAO)

Agricultural Department (AG)

Plant Production and Protection Division (AGP)

Crop and Grassland Service (AGPC)

Dr. Dat Van Tran, Agricultural Officer (Rice Agronomy)

Dr. Van Nguu Nguyen, Agricultural Officer (Rice Agronomy)

Seed and Plant Genetic Resources Service (AGPS)

Dr. Arturo J. Martínez, Chief

Dr. Michael A. Larinde, Agricultural Officer (Seed Production)

Land and Water Development Division (AGL)

Dr. Kenji Yoshinaga, Director

Agricultural Support Systems Division (AGS)

Dr. Geoffrey C. Mrema, Director

Farm Management and Production Economics Service (AGSP)

Mr. Doyle Baker, Chief

Dr. Rosa S. Rolle, Agricultural Industries Officer

Technical Cooperation Department (TC)

Policy Assistance Division (TCA)

Mr. Santiago Funes, Director

Field Operations Division (TCO)

Management and Coordination Service (TCOS)

Special Programme for Food Security (SPFS)

Mr. Abdul Q. Kobakiwal, Chief

Economic and Social Department (ES)

Office of Assistant Director-General (ESD)

Global Perspective Studies Unit (ESDG)

Mr. Jelle N. Bruinsma, Chief

Commodities and Trade Division (ESC)

Global Information and Early Warning Service (ESCG)

Dr. Shukri Ahmed, Agricultural Economist

Agriculture and Economic Development Analysis Division (ESA)

Food Security and Agricultural Projects Analysis Service (ESAF)

Mr. Jean Senahoun, Agricultural Economist

2. Ministère de l'Agriculture et des Ressources Animales (Ministry of Agriculture and Animal Resources) (MINAGRA)  
Dr. Zakra A. Nicodeme, Directeur de Cabinet  
Mr. Kohei Ajiro, Agricultural Policy Advisor (JICA Expert)
3. Ministère de l'Agriculture et des Ressources Animales - Projet National Riz (PNR)  
Mr. Coulibaly Djande, Chef du Service Infrastructures & Aménagement  
Dr. Abdoul Aziz SY, Senior Agricultural Scientist  
Mr. Bosson Bouadou, Chef du Service Agronomie  
Mr. Yeo Sirigui, Projet KR II Coordonnateur
4. PNR - Yamoussouko  
Mr. Mangoua Koffi, Chief of Seed Production  
Mr. Don Amhé  
Mr. Zady Richard, Assistant of Production  
Mr. Douni Sorho, Assistant of Production
5. Agence Nationale d'Appui au Développement Rural (National Rural Development Agency) (ANADER)  
Dr. Sidiki Cissé, Directeur General Adjoint  
Mr. Tienele Ekou, Conseiller Technique du Directeur General  
Mr. Odo Abroma Georges, Directeur du Departement Appui aux Filieres et aux Organisations Professionnelles Agricoles  
Mr. Akpro Essoh, Attache de Direction  
Mr. Clounaho Daniel, Directeur du Departement Vulgarization et Recherche/Developpement  
Mr. Mamadpou Cherif, Chef de Division Semences et Plants  
Mr. Kanga N'zire, Chef de Division Appui aux Productions Vegetales
6. ANADER - Gagnoa  
Mr. Beda Seka, Chef de Zone de Gagnoa  
Mr. Bamba Siakia, Crop Cultivation Specialist (Banana, Rice, Tomatoes)  
Mr. Jean Marie Tiete
7. ANADER - Central Region  
Dr. Adama Coulibaly, Directeur Regional ANADER Centre  
Mr. Kouadio Yao, Conseiller Technique du Directeur  
Mr. Gaillé Blaignouère, Coordonnateur Technique  
Ms. Ekpinda Benadette, Chef Section Appui aux Filieres de Productions Vegetales  
Mr. Assouhou Assouhou Désiré, Chef d'Etudes en Aménagement  
Mr. Koffi Bla Alphonse, Charge d'Unité Etudes en Aménagement  
Mr. Pehe Jérémie, Chef de Zone de Bouake
8. Centre de Formation à la Méchnisation Agricole de Grand-Lau (CFMAG)  
Mr. Daya Rovert, Directeur du Centre



Mr. Ebi Aboije, Formateur en Utilisation Machine  
Mr. Dramane Coulibaly, Formateur en Utilisation Machine  
Mr. Malan Kadio, Formateur en Maintenance Machine  
Mr. Coulibaly Séydou, Formateur en Maintenance Machine  
Mr. Bessué Siméom, Documentaliste

9. West Africa Rice Development Association (WARDA)

Dr. Kanayo F. Nwanze, Director General  
Dr. Gunther Hahne, Director of Research  
Dr. Yacouba Séré, Acting Program 1 Leader/Plant Pathologist  
Dr. Hiroshi Tsunematsu, Associate Upland Rice Breeder (JIRCAS)  
Dr. Howard Gridley, Lowland Rice Breeder  
Dr. Marie-Noëlle Ndjiondjop, Molecular Biologist  
Dr. Koichi Futakuchi, Crop Ecophysiologicalist  
Dr. Sitapha Diatta, Soil Physicist  
Dr. Kouamé M. Miézan, Program 2 Leader/Irrigated Rice Breeder  
Dr. Toon Defoer, Acting Program 3 Leader/Technology Transfer Agronomist  
Dr. Olaf Erenstein, Production Economist  
Dr. Aliou Diagne, Impact Assessment Economist  
Dr. Abdoul Aziz SY, African Rice Initiative (ARI) Coordinator

10. FAO Côte d'Ivoire Office

Mr. Amadou Moustapha Kamara, Representative  
Ms. Naminata E. Fadiga, Assistant of Programme

11. United Nations World Food Programme (WFP) Côte d'Ivoire Office

Ms. Trudy Bower-Pirinis, Director/Representative  
Mr. Koffi Germain Akoubia, National Project Coordinator, Projet Bas-Fonds  
Dr. Fujio Nagumo, Technical Adviser, Projet Bas-Fonds

12. WFP Bouaké Branch

Mr. Gnépo Aka Bénjamin, Chef d'Antenne

13. Sasakawa Global 2000 Guinea

Dr. Tareké Berhe, Resident Representative  
Mr. Naby Yaya Cissé, National Coordinator  
Mr. Wann Alpha Boubacar, Administrative Accountant  
Mr. Shuichi Ohno, Director of International Affairs, Japan Foundation  
Mr. Masataka Minagawa, Secretary General, Sasakawa Africa Association

14. Ministère de l'Agriculture de l'Élevage (Ministry of Agriculture and Livestock) (MAEF)

Mr. Jean Paul Sarr, Minister  
Mr. Fassou Elie Damey, Vice Minister  
Mr. Abdoul Karim Camara, National Director of Agriculture

Dr. Sekou Cissé, National Director of Research  
Mr. Babagalle Camara, National Director of Rural Development and Extension  
Mr. Mody Sidy Diallo, Chief of Research Division, National Rural Development and Extension Service (SNPRV)

15. Embassy of Japan in Italy

Mr. Hideki Moronuki, First Secretary  
Mr. Fumihiko Kabuta, First Secretary

16. Embassy of Japan in Cote d'Ivoire

Mr. Yuji Kurokawa, Ambassador  
MR. Shinji Tomita, First Secretary

17. JICA Cote d'Ivoire Office

Mr. Togawa Toru, Resident Representative  
Ms. Mayumi Ando Ndiaye, Assistant Resident Representative  
Mr. Jun Yoshimizu, Assistant Resident Representative  
Ms. Tamao Muto, Special Advisor

18. Projet d'Amélioration des Systèmes d'Exploitation Agricole dans l'agriculture irriguée de petite taille (PASEA)

Mr. Koji Yamanaka, Chief Advisor  
Mr. Jun Nakajo, Expert (Farming)

19. Embassy of Japan in Guinea

Mr. Hisaya Komatsu, Ambassador  
Mr. Kazunari Kubota, First Secretary  
Mr. Masayoshi Kikuchi

## Appendix 2: IFDC's Proposal for Technical Cooperation with JICA

### Improving farmers' livelihoods in West Africa's inland-valley rice-based production systems through integrated water and soil fertility management practices

#### Concept note

##### Background

Rice demand is rapidly increasing in sub-Saharan Africa, outpacing regional supply. Imports of about 5 million tons per year represent half of the consumption needs, valued at more than one billion Euros per year. Rainfed rice-based production systems (both upland and lowlands) cover about 75% of the total rice area in West and Central Africa. Rainfed lowlands (inland valley bottoms and flood plains) are the most important rainfed rice-based systems, providing about 36% of total rice production. The potential to increase rice production through more intensive use of rainfed lowlands is tremendous. These systems are by nature more robust than upland systems (higher soil fertility levels) and the potential for yield increases is greater than in upland areas because of better water availability during the growing season. It has been estimated that inland valleys in sub-Saharan Africa cover 200 to 300 million hectares and that only about 15% is currently utilized. Rice yields in the rainfed lowlands are about 1-1.5 t ha<sup>-1</sup>. Potential yields in these systems are about 6-8 t ha<sup>-1</sup>, indicating that there is substantial scope for improved yields. Such yields can be obtained through improved varietal choice, water and integrated soil fertility management, using a combination of inorganic fertilizers and locally available organic resources.

The Africa Division of IFDC (An International Center for Soil Fertility and Agricultural Development) based in Lomé, Togo, with its experience in integrated soil fertility management; participatory research and extension; input and output market development and partnership building in West Africa is particularly suited to take the lead in a project that targets intensification of rice-based production systems in the inland valley lowlands in West-Africa. The project's objective is to enhance farmers' livelihoods through improved yields and profits and to reduce the pressure on the more fragile upland environments. IFDC-Africa will work in close collaboration with the West Africa Rice Development Association (WARDA), farmers' organizations, national research and extension agencies, and NGOs in West Africa. WARDA will provide germplasm suitable for the lowlands, including NERICAs<sup>1</sup>, and will ensure that project results are disseminated through the Inland Valley Consortium, a collaborative effort of 10 West African Countries and several international institutions convened by WARDA. The project envisages working in 6 target-countries: Benin, Burkina Faso, Ghana, Mali, Nigeria and Togo.

The large diversity of inland valley ecosystems in terms of physical and socio-economic conditions explains the heterogeneity of rice-based production systems in the West African region. Research and extension approaches are needed that appropriately address the diversity

---

<sup>1</sup> The West Africa Rice Development Association (WARDA) has developed the New Rices for Africa (NERICAs) based on crosses between African Rice (*Oryza glaberrima*) and Asian rice (*Oryza sativa*). Most of the lines that are now in the field in West Africa in particular are doing very well in upland environments. WARDA is currently working on the next generation of NERICAs suitable for lowland environments and a first set of promising material is available. It is proposed that this new material will be used in this project in combination with the development of best-bet options in terms of soil fertility management to ensure high and sustainable rice yields.

and dynamics of rice-based farming systems and move beyond simple delivery of messages or recipes to be passed to farmers. What is needed are approaches that 1) strengthen farmers' capacities to improve overall productivity of the rice-based farming system and to make optimal use of available natural, human and financial resources and 2) facilitate (institutional) changes that improve farmers' access to factor (inputs, credits, ..) and product-markets. The Africa Division of IFDC is particularly strong in the use of a holistic approach to the sustainable intensification of production systems. In this approach every aspect of the production chain is thoroughly analyzed, from the development of factor markets (such as fertilizers and credits) and the farm production unit itself (translating inputs into yield in an optimal and sustainable manner), to the development of output markets to ensure that increased production levels can be sold against reasonable prices. The intensification of the inland valley lowland systems for rice production will be addressed through a series of interventions that all aim to install a process of social learning that guides technical innovation and institutional changes that empowers the farmers and other stakeholders and that permit scaling-up of results at an early stage.

Given the diversity of the rice eco-systems, a bottom-up, participatory learning and action-research approach will be developed and fine-tuned involving all stakeholders. There is a huge potential in building bridges between local indigenous and scientific knowledge to design and test options for integrated water and soil fertility management in inland valley rice-based production systems. Care will be taken that such innovations are sustainable and do not have adverse consequences for the inland valley system as a whole and/or beyond (e.g. downstream water users). A participatory learning and action research approach among inland valley development stakeholders (farmers, input-dealers, traders, credit structures, extension, research) will enable farmers to become experts in managing their inland valleys, emphasizing adaptive responses to context-specific problems and making the best use of available resources, local knowledge and decision making as well as research-based understanding and analysis of underlying processes. This process approach will among others lead to a curriculum for farmer learning and set the stage for farmer-to-farmer extension. Networks of farmer associations and stakeholder platforms including various kinds of service providers (e.g. fertilizer dealers) will be created within the framework of integrated water and soil fertility management.

Facilitation of social learning processes that lead to both technical and institutional changes will require skills that are quite different from those used by most research and development workers. Adult learning, bringing in adapted scientific insights at the right moment and on the right topic to complete farmers' knowledge and practices, assisting farmers in collective learning and improving social cohesion and networking are fundamental elements of facilitation of participatory learning and action research processes. This requires social and anthropological insight as there is a wide diversity in the human and social capital found within inland valleys, determined by differences in education, skills, ethnic origin, and relations of trust, reciprocity, local leadership and land tenure security. Farmers need to manage these resources in a collective manner to avoid conflicts and to allow for more intensified but sustainable use. This will ultimately lead to farmers working together and improving social cohesion in the village communities that are exploiting the inland valley system.

Finally, the nature of institutional frameworks and policy contexts is of crucial importance for scaling up of farmer learning and facilitation of learning. With research and extension services forming close partnerships with farmer associations, decentralization of management, flexibility and trust will become highly important. This will likely require change in attitude and behavior of staff members and especially of the higher-ups of the organizations. To effectively facilitate farmer learning, the research and extension services will have to become learning organizations themselves. NGOs and civil society organizations will be instrumental supporting these institutional change processes.

### **Objectives**

To improve livelihoods of farmers in West Africa, through community-based integrated soil fertility and water management and the use of new rice germplasm (including NERICAs) in inland valley agro-ecosystems.

### **Target countries**

Benin, Burkina Faso, Ghana, Mali, Nigeria, Togo.

### **Partners**

Farmers, NARES, NGOs from target countries, IFDC-Africa Division, WARDA, Inland Valley Consortium (a collaborative effort of 10 West African countries convened by WARDA promoting more intensive use of inland valleys).

### **Activities**

1. Partnership building among inland valley development stakeholders:
  - ➔ One regional workshop in year 1 (all partners)
  - ➔ Country-specific workshops in years 1-5 (selected partners depending on target country)
  - ➔ Final regional workshop in year 5 (all partners)
2. Development of the technical basis for sustainable integrated soil fertility and water management (ISFM):
  - ➔ Selection of keysites in year 1
  - ➔ Participatory experimentation and interactions, collective learning and decision-making at the keysites (years 1-2)
  - ➔ Development of knowledge base on ISFM options (years 1-5) based on decision-trees linking site-specificity (years 1-5)
3. Development of the methodology basis for community-based ISFM
  - ➔ Development of curriculum for experiential farmer learning based on observation – analysis – decision making (years 1-2)
  - ➔ Testing and fine-tuning of farmer training modules (years 1-3)
  - ➔ Promotion of social learning and interaction, behavioral change and innovation (years 1-5)
  - ➔ Improving connectedness within and among farmer organizations and local institutions (the horizontal dimension) and between farmer organizations and research and extension services and NGOs, and farmers and factor and product markets (the vertical dimension).
4. Scaling up and scaling out
  - ➔ Institution building and networking activities to develop and sustain access to factor and product markets (years 1-5)

- ➔ Training of extension workers, farmer trainers and other stakeholders (year 2-5)
- ➔ Extending the community-based ISFM towards surrounding communities (year 3-5)
- ➔ Development of extension materials assisting extension workers, farmer trainers and input dealers (advice on input-use for ISFM) in scaling up the process (year 2-5)
- ➔ Promoting decentralization of management, flexibility and trust within the participating NARES and NGOs; involving higher-ups at crucial stages of the process (year 2-5)
- ➔ Extending the horizontal and vertical connectedness from local to regional and national levels; forming the platform for inland valley development
- ➔ Organizing regional and national workshops for the promotion of organizational learning (year 5)
- ➔ Monitoring and evaluation of community-based ISFM (year 5)
- ➔ Information sharing and networking (years 1-5)

### **Outputs**

1. Sustainable productivity enhancing innovations (intensification and diversification options) identified, adapted, evaluated and successful ones scaled-out reaching more than 60 000 farmers and raising yield levels by at least 50%.
2. Methodological approach for participatory learning and action research/ extension developed and fine-tuned; community-based ISFM put into practice, curriculum for farmer learning (farmer-to-farmer training) developed and training modules developed
3. Capacity built among stakeholders; extension workers, input-dealers and farmer trainers trained
4. Network of farmers associations and platforms for inland valley development stakeholders (including input dealers, credit structures and traders) established
5. NARES and NGOs working along the lines of decentralized management and promoting institutional learning.

### **Partners and responsibilities**

- IFDC-Africa Division: overall project coordination, community-based ISFM; training, information sharing, networking, scaling-out, monitoring and evaluation; reporting
- WARDA (Inland valley consortium): provider of suitable germplasm (including NERICAs suitable for lowland growing conditions), training, information sharing, networking.
- Farmers: development and evaluation of technological, methodological and institutional innovations; training of farmers
- NARES / NGOs: training of farmers and input dealers, networking and platform building, scaling up and out

### **Benefits**

The main target groups are resource-poor small-holder rice farmers in 6 West African countries: Benin, Burkina Faso, Ghana, Mali, Nigeria and Togo. In the first three years, the project will work on 4 selected keysites in each country. In years 4 and 5 of the project more than 20 neighboring communities involving more than 500 farmers per site will directly benefit from the project; for the 6 countries this involves more than 60,000 farmers.

The development and adoption of new rice germplasm and ISFM will have considerable impact on farmers' livelihoods through the increase of at least 50% of rice productivity. The benefits will extend beyond the collaborating farmers through the set-up and strengthening of coalitions and farmer associations and the development of local, regional and national platforms including representatives of credit, delivery and marketing services, governmental extension services, NGOs and research organizations in each of the five collaborating countries.

IFDC-Africa and WARDA networks, including the Inland Valley Consortium will be instrumental in diffusion of knowledge gained in the project.

### Estimated budget

Euro 3.5 million for a period of five years.

(END)

### <Reference>

#### IFDC Budget Prospect for Fiscal 2003

Project	Donor	US\$1,000/year	Possibility
Afghanistan (Agricultural inputs)	USAID	20,000	High
Asia (Poverty reduction by rice supply and environmental conservation)	IFAD	560	High
Nigeria (Market of agricultural inputs)	USAID	1,300	High
North Africa (Strengthening of agricultural input information)	IFAD	500	High
West Africa (Exploration of market of agricultural inputs)	Netherlands	1,400	High
Ethiopia (Design of agricultural business strategy)	Ethiopia	250	Some
Kosovo (Chicken feeding program)	Save the Children (NGO)	400	Some
Mozambique (Training on fertilizers and water management)	SG2000 (NGO)	30	Some
Total		24,440	

IFDC's Proposal	West Africa (Fertilizers and water management for the increased rice production)	JICA	700	Not determined
-----------------	---	------	-----	----------------

Note: Since its establishment in 1974, IFDC has contributed to the development of rural communities in 150 developing countries through fertilization techniques and the development of markets for processed products. The leaping program based on the "IFDC Reform Plan" that began in 1999, the 25th anniversary of the organization, reflects its budget plan (US\$8.6 million in fiscal 2001, US\$18.1 million in fiscal 2002 and US\$24.4 million in fiscal 2003.) A convention participated by 10 directors and 40 resident representatives in Africa, Middle East, Albania, Kosovo, Afghanistan and other countries was held in October 20-22, 2002, at the IFDC headquarters in Alabama in the United States.

Source: Prepared by the Study Team based on information obtained from IFDC.

### Appendix 3: Socioeconomic Conditions of Republic of Côte d'Ivoire (as of February 1, 2002)

<b>General condition</b>	<Stable country in West Africa>
1. Area	322,463 km <sup>2</sup> (About 90% of Japan)
2. Population	14.211 million (1997)
3. Capital city	Yamoussoukro (Population: approx. 200,000 in 1998) (In reality, Abidjan functions as its capital (Population: approx. 3.15 million in 1998))
4. People	Senoufo, Baoul, Guro, Gun, Ache, Betes, Gele
5. Language	French (official language), indigenous languages
6. Religion	Muslim (30%), Christian (10%), traditional religions (60%)
7. Brief history	Before 14th century, such empires as Gurishabo, Beche, Andenyu co-existed simultaneously. Sep. 1958 Entered the French Community. Aug. 1960 Became independent as Côte d'Ivoire. Nov. 1960 Houphouet-Boigny was elected its first President. Jan. 1990 Houphouet-Boigny was elected President for the seventh term. Dec. 1993 Houphouet-Boigny died. Feb. 1994 Konan Bedie became President (provisional). Jan. 1995 Konan Bedie became President officially. Dec. 1999 As a result of a military coup, former General Robert Guei took power. Bedie fled out of the country. Jan. 2000 Provisional government led by former General Guei was established. Jan. 2000 former General Guei was overthrown. Laurent Gbagbo became President.

<b>Politics, domestic affairs</b>	<Relaxation of tension between ruling and opposition camps>
1. Form of government	Republican
2. Head of provisional government	Laurent GBAGBO
3. Government (as of Oct. 27, 2000)	Foreign Minister Abou Drahamane SANGARE
4. Domestic affairs	In Côte d'Ivoire, President Houphouet-Boigny, who had been in power since its independence in 1960, died in December 1993. Konan Bedie, who was the Speaker of the National Assembly, became a new president in February 1994 under the Constitution. In the presidential election in October 1995, Bedie was officially elected President. However, in December 1999, a coup was led by former General Guei and President Bedie was overthrown. A provisional government led by former General Guei was established and the political condition of the country was in chaos. Although a presidential election was held in October 2000, former General Guei lost power due to a public protest against the election result. As a result of the election, candidate Laurent Gbagbo became President. Under his administration, the National Assembly and local elections were held. The National Reconciliation Forum was held from October 9 to December 18, 2001, participated by political parties, religious groups and citizens organizations.

<b>Foreign affairs, defense</b>	<French West Africa's leading country>
1. Basic foreign policy	Since its independence in 1960, the country has taken pro-West, mainly France, moderate and realistic foreign policies while taking a position as a nonaligned nation as a principle.
2. Military force	(1) Budget: US\$1.79 million (1999) (2) Military service: (selection) draft system (6 months) (3) Military force: 13,900 servicemen (Army: 6,800, navy: 900, air force: 700, President's garrison: 1,100, military police: 4,400) (4) Foreign military force stationed in the country: 500 (French force)

<b>Economy</b>	<French West Africa's leading country>
1. Major industries	Agriculture (cocoa, coffee, etc.) forestry
2. GNP	US\$9,434 million (1996), US\$10,152 million (1997)
3. GNP per capita	US\$660 (1996), US\$710 (1997)
4. Annual growth	1.8% (1994), 7.0% (1995), 6.8% (1996), 6.5% (1997)
5. Inflation rate	26% (1994), 14.3% (1995), 2.5% (1996), 5.6% (1997)
6. Unemployment rate	
7. Total trade value (1999)	(1) Exports: US\$2,648 million (2) Imports: US\$1,752 million
8. Major trade items (1999)	(1) Exports: cocoa, oil products, timber, coffee (2) Imports: oil products, food



9. Major trading partners (1999)	(1) Exports: France, United States, Netherlands, Germany, EU, UEMOA (2) Imports: France, Nigeria, China, Italy, EU, UEMOA
10. Currency	CFA franc
11. Exchange rate	1 Euro = 656CFA franc (Due to the change in the currency unit in January 2002)
12. Economic condition	The nation's key industry is agriculture and 80 percent of its population is engaged in the industry, accounting approximately 30 percent of its GDP and majority of its exports. Although the major items are coffee and cocoa, which support the nation's economy, partly due to the falling international prices of such primary products and enormous foreign debts, it fell into an economic crisis and as a result, it had no other choice to declare the suspension of the payment of debts to the Paris Club and the London Club in May 1987. Consequently, it began a structural adjustment program under IMF and the World Bank in September 1989. However, IMF stopped providing loans to the country, claiming its economic rehabilitation measures were not sufficient. EU also quit providing aid for the country because bribery for EU aid of about FCFA 18 billion was disclosed. The nation is under the pressure to take strict measures.
13. Foreign debts	US\$13,170 million (1999)

<b>Economic cooperation</b>	(unit: 100 million yen)
1. Japan's assistance in the past	(1) Loan aid (until fiscal 1999, EN basis) 107.39 (2) Grant aid (until fiscal 1999, EN basis) 318.85 (3) Technical cooperation (until fiscal 1999, JICA base) 77.51
2. Major donor countries (1998: US\$ million, total of DAC nations: US\$232.7)	(1) France (190.9) (2) Spain (64.2) (3) Canada (45.5) (4) Japan (40.0) (5) Belgium (35.0)

<b>Bilateral relationship</b>	<Extremely pro-Japan>
1. Political relationship	Japan has had friendly relationship with the country since its independence. In consideration of the say of the country, Japan considers it as one of the important countries in West Africa. The country is extremely pro-Japan; for example, late former president Houphouet-Boigny had praised Japan as a model nation for establishing the country on every possible occasion. In June 1999, then President Bedie made an official visit to Japan as the nation's first president to visit to Japan. Japan's diplomatic establishment in Côte d'Ivoire: Japanese Embassy in Côte d'Ivoire (opened on February 22, 1964) Côte d'Ivoire's diplomatic establishment in Japan: Côte d'Ivoire Embassy in Japan (opened on September 19, 1969)
2. Economic relationship	(1) Trade with Japan (a) Trade value (unit: million yen) Exports: 1,860 (1998), 1,420 (1999), 1,389 (2000) Imports: 6,608 (1998), 7,910 (1999), 3,404 (2000) (b) Major trade items (2000) Exports: cacao fat, cacao beans, cocoa paste Imports: tire, steel plate, cement
3. Bilateral treaties and agreements	Conclusion of trade agreement (May 26, 1970) Conclusion of agreement on the dispatch of JOCV members (December 22, 1989)

Source: Ministry of Foreign Affairs, Japan (<http://www.mofa.go.jp/mofaj/area/guinea/data.html>) (partially omitted)

#### Appendix 4: Socioeconomic Conditions of Republic of Guinea (as of August 1, 2002)

<b>General condition</b>	<French African country with diverse nature and people>
1. Area	245,857 km <sup>2</sup>
2. Population	7.4 million (2000)
3. Capital city	Conakry (Population: approx. 1.1 million)
4. People	About 18 tribes, including Malinke, Fula, Susu
5. Language	French (official language,) indigenous languages (Malinke, Susu, Fula)
6. Religion	Muslim (75%), traditional religions (9%), Christian (4%)
7. Brief history	In the 15th century, Portuguese arrived at the country to start trade. 1904 French colony. 1946 Formed West Africa Federation of French Colony. 1958 Became independent (Republic of Guinea.) and Sekou Toure became president. 1978 Its name changed to People's Revolutionary Republic of Guinea. 1984 Bloodless military coup, Lansana Conte became President. (Change its name into Republic of Guinea.) 1985 Former Vice President Traore attempted a coup. 1990 The "national basic law" was adopted as a result of a national referendum. 1993 Presidential election (President Conte was elected.) Feb. 1996 Bloody demonstrations by national servicemen. Dec. 1998 Presidential election (President Conte was reelected.)

<b>Politics, domestic affairs</b>	<Promotion of transfer from socialism to liberal democratic system>
1. Form of government	Republican
2. Head of state	Lansana CONTE
3. Assembly	National assembly (one-chamber system)
4. Government	(1) Prime Minister: Lamine SIDIME (2) Foreign Minister: Francois Lonseny FALL
5. Domestic affairs	The current Conte administration established as a result of a coup in 1984 took a drastically different course from the traditional Sekou Toure. It gained support from IMF, the World Bank and other international institutions and promoted the transfer of its system from the former socialistic system to a liberal system. In December 1990, the national basic law that stipulated the introduction of multiple party system was approved by a national referendum. In the presidential election in December 1993, current President of Lansana Conte was elected. The foundation of then democratic government system was not necessarily stable. Although a military demonstration demanding a pay raise turned into an attempted coup in February 1996, President Conte was reelected in the presidential election in December 1998 and the nation's domestic condition has been relatively stable in recent years. Because the national referendum in November 2001 approved that the term of presidency is for seven years and president can be reelected unlimitedly (the 1990 national basic law stipulated the term be for five years and president could be reelected only once.), the presidential election scheduled in December 2003 is highly likely to draw much attention domestically and from overseas. After September 2000, there were attacks around the borders of Sierra Leone and Liberia by armed groups who entered the zone from the two countries. As of 2002, although there was influx of refugees from Liberia, the border area settled down due to peace achievement in Sierra Leone.

<b>Foreign affairs, defense</b>	<Mild change of course from pro-East to pro-West>
1. Basic foreign policy	After its independence, because it separated itself from its suzerain of France and its relationship with neighboring African countries became strained, it sought the Soviet Union for support and it adopted a pro-East nonaligned policy. However, through participation in ECOWAS (Economic Community of West African States) and improvement in relationship with France, it changed its policy into pro-West in the last days of Sekou Toure government. The current government is working to have cooperative relationship with developed countries while promoting regional cooperation within such a framework as ECOWAS.
2. Military force (2000 military balance)	(1) Budget: US\$57 million (1999) (2) Military service: draft system (2 years) (3) Military force: 9,700 servicemen (Army: 8,500, navy: 400, air force: 800) (4) UN peacekeeping operations: Liberia (ECOMOG), Sierra Leone (ECOMOG), West Sahara (MINURSO)

<b>Economy</b>	<Abundant resources and potential>
1. Major industries	(Agriculture) rice, cassava, coffee, pineapple (Mining) bauxite, aluminum oxide, diamonds
2. GNP	US\$3 billion (2000)
3. GNP per capita	US\$450 (2000)
4. Annual growth	2.0% (2000)
5. Inflation rate	8.4% (2000)
6. Unemployment rate	Not known
7. Total trade value	(1) Exports: US\$754 million (1999) (2) Imports: US\$580 million (1999)
8. Major trade items (1999)	(1) Exports: bauxite, aluminum oxide, gold (2) Imports: capital goods, oil products, intermediary goods
9. Major trading partners (1999)	(1) Exports: Belgium/Luxembourg, United States, Russia, Spain (2) Imports: France, China, United States., Côte d'Ivoire
10. Currency	Guinea franc
11. Exchange rate	1,746.9 Guinea franc = US\$1 (average in 2000)
12. Economic condition	The country has abundant underground resources. For example, it possesses one-third of world's deposits of bauxite. However, its economic activities slowed down under Sekou Toure administration because of its choice of socialism. Later, the liberal policy taken by the current Conte administration turned to be successful and its economy has gained vitality. In cooperation with IMF and the World Bank, the nation has implemented a drastic structural adjustment program, bearing some fruits, while aftereffects of inflation are appearing. It is also working hard to realize self-sufficiency in agricultural products (especially rice) to promote agriculture, its key industry.
13. Foreign debts	US\$2.3 billion (2000)

<b>Economic cooperation</b>	(unit: 100 million yen)
1. Japan's assistance in the past	(1) Loan aid (until fiscal 1999, EN basis) 160.10 (No loan has been provided since fiscal 1990.) (2) Grant aid (until fiscal 1999, EN basis) 293.69 (3) Technical cooperation (until fiscal 1999, JICA basis) 40.10
2. Major donor countries (2000: US\$ million)	(1) United States (25.7) (2) Japan (19.1) (3) France (17.4)

<b>Bilateral relationship</b>	
1. Political relationship	Japan approved the Republic of Guinea on November 14, 1958. Guinea opened its embassy in Japan in December 1972, while Japan opened its embassy in Conakry in January 1976.
2. Economic relationship	(1) Trade with Japan (a) Trade value (unit: 100 million yen) Exports: 8.3 (1998), 4.0 (1999), 3.5 (2000) Imports: 26.3 (1998), 19.4 (1999), 14.3 (2000) (b) Major trade items (1998) Exports: fish (frozen fillet), timber (rough) Imports: steel plate (coat), passenger car, motorcycle (2) Japanese companies in Republic of Guinea: JNC, Kanematsu, Tone
3. Bilateral treaties and agreements	Conclusion of trade agreement (April 19, 1963)

Source: Ministry of Foreign Affairs, Japan (<http://www.mofa.go.jp/mofaj/area/guinea/data.html>) (partially omitted)