

# Coopérer aujourd'hui n° 29

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## Institutional Innovations and Water Management in Office du Niger (1910-1999)

### **The Long Failure and New Success of a Big Irrigation Scheme**

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In Mali, the Office du Niger irrigation scheme had long been a technical and financial failure. After nearly 20 years of physical rehabilitation, and economic and institutional change, it is now seen as a success story. How did such changes occur? What kinds of institutional innovations made them possible? Are these institutional issues the main factors that explain this new « success »? Prepared as part of a World Bank/Wageningen Agricultural University study on innovations for irrigation management, this report analyses the history of these changes and explains the process that took place.

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## **Abstract**

Can economic liberalization boost irrigation production and on which conditions?

The old colonial scheme, the Office du Niger, was created in 1932. Gravity irrigated from a derivation from the Niger river to the Markala dam, this zone's goal was to satisfy the needs of metropolitan France. The scheme nearly disappeared at the end of the 1970s because of structural economic and financial bankruptcy and the irreversible decay in the scheme. Irrigated cotton was abandoned in 1970, and rice yields remained low (1 to 1.5 t/ha).

The restructuring of the Office du Niger focused on both institutional and technical aspects—physical upgrading/repairs and technical norms. It was carried out over a long period of time (1979-1996) and underwent a noteworthy turning point in 1994 with the Office du Niger's new status and the implementation of a performance contract that redistributed tasks and responsibilities between the State, the Office du Niger and Farmers in a rapidly changing international (liberalization and devaluation of the CFA franc) and national (structural adjustment, democratization and decentralization) political context. This restructuring was the object of a pitched battle between the rigid but cracked bureaucracy of the Office du Niger, the new central government leaders, relatively coordinated donors and farmers progressively getting organized first in Village Associations and, more recently, in Unions. It made it possible to give farmers true economic incentive to intensify and contribute to management of the Office through representation committees. The Office du Niger was thus cleared of all that dealt with agricultural product sectors, credit and farmers organization through a process of economic liberalization, privatization and transfer of responsibilities.

The physical upgrading made better water management possible. This was facilitated by the creation of new networks and control works, better water regulation, and precise leveling according to a harmonized technical baseline. The strong increase in yields (up to 6 t/ha) thanks to transplanting and high-yield varieties, in productivity and in net income per hectare (more than tripled for all) thanks to double-cropping have more than compensated for the reduction in irrigated surfaces per farmers. The diversification of production systems with market gardening has increased, stimulating economic initiative and making water management more complex.

Water service and maintenance are now provided through shared responsibilities. Institutional innovations have been made, with the creation of mixed structures, the "representation committees" bringing together farmers and Office du Niger agents. These representation committees are not autonomous water users associations (AUE / WUA). The Office is totally re-focused on the functions of water management and maintenance with a mission to provide rural advice.

This double technical and institutional restructuring made it possible for the agronomic and economic performances Office du Niger to truly skyrocket, responding to the need for financial balance (re-absorption of the deficit), local demographic growth, the increase in

national food needs, market opportunities in a context of liberalization and privatization and the processing demands for irrigated farms.

This mutation did not take place spontaneously either. It took close to 20 years from the first upgrading and intensification projects at the end of the 1970s to the recent implementation of the reforms ratified by the 1994 law—20 years of continuous effort, of wrestling with the *Office* and of massive investment by a series of donors.

How can one explain the success of such a mutation? With hindsight, a certain number of factors seem to have been essential. There is of course the overall framework—launch intensification through a combination of changes in techniques and economic incentives; and improve the system's efficiency by a liberalization of the sector; and the restructuring of the *Office*, refocused on central functions with the suppression, transfer or privatization of the other functions.

The availability of a technical package, the creation of a favorable macro- and micro-economic framework and the implementation of institutional reforms (made necessary by the first two points) are also three of the keys to success. While these three keys are undoubtedly necessary conditions, they are not sufficient: a progressiveness in the intervention; a reform in parallel with macro-economic reforms with clear political will; a lasting coordination among donors; also played a crucial role. The existence of field staff funded by donors and partially independent of the *Office* made fuller feed-back of information on the realities in the field and on local reactions, in particular by passing on the opinions of farmers who had hardly any other channel to express themselves.

The history of the *Office* shows that, if there are to be successful, privatization and irrigation management turn-over are not just a small process. It took nearly 20 years to achieve this goal, through a virtuous series of technical changes, micro- and macro-economic environmental reforms and institutional reforms that were in part not tied to the *Office* and support programs themselves but that came “at the right time”. Some factors were due to the context or principles of action and can be reproduced (political will and coordination among donors; and progressive action, for example). Other factors were due to a favorable set of circumstances, a virtuous chain of factors that *a priori* could not be totally predicted.

## I. INTRODUCTION

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The *Office du Niger* in Mali is the oldest colonial irrigation scheme in West Africa. Created in 1932, it was planned to irrigate 1 million ha, but only 68,000 ha<sup>1</sup> were actually developed. Yields remained low for more than 50 years, through different policies. The *Office du Niger* needed heavy state subsidies. A long process of technical and institutional changes began in the mid-1980s, contributing to a dramatic increase in productivity and drastic restructuring of the *Office*: yields are three times higher than before rehabilitation; double cropping is practiced on one third of the area<sup>2</sup>; the *Office du Niger* area produces half of the national rice production and exports rice to other parts of Mali and to neighbor countries<sup>3</sup>. The *Office* staff has been drastically reduced and now focuses on water management and maintenance.

The *Office du Niger* was seen for so many years as a heavy financial burden. It is now seen as a “success story”<sup>4</sup>. How did such changes occur? What kind of institutional innovations made them possible? How were they implemented? Are these institutional issues the main factors that explain this new “success”? Is the economic and institutional framework now stabilized?

Institutional innovation is not only a question of drawing up the best “blueprints”. Institutions are embedded in social relationships and in history. Innovation implies changing the power balance between actors, breaking old practices, and building new regulations. It is a process that meets the different actors’ logics of interest and it is partially determined by the context.

For these reasons, describing the current institutional framework and discussing how responsibilities are shared are not enough to determine if and how institutional innovations can help improve water management and irrigation efficiency. A historic and dynamic overview that shows the different steps and how the different stakeholders reacted is needed.

In this paper, we will first present the spatial and historical background of the *Office du Niger*—a symbol of colonial irrigation schemes and managed as a state enterprise. We will describe the restructuring process that was launched in the late 1970s, mainly because the scheme was a financial burden on the State. We will discuss the different components of this process (physical rehabilitation, economic liberalization, institutional restructuring) and the interactions between these components. We will then describe the current institutional framework and discuss its efficiency.

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<sup>1</sup> The *Office du Niger*’s *Schéma Directeur* 2000, gives 55,000 ha of irrigated land, 28,000 ha of which have been rehabilitated and 10,000 ha of which are “*hors-casier*” lands and 3,000 ha in controlled flood irrigation.

<sup>2</sup> Office du Niger-ARPON; 1997.

<sup>3</sup> *Schéma Directeur*, 2000.

<sup>4</sup> See *World Bank publications*, Aw D., Dejou C. 1996 and *Findings n° 61*, 1998. and Amr H., 1996. *Working Paper*, provisional version.

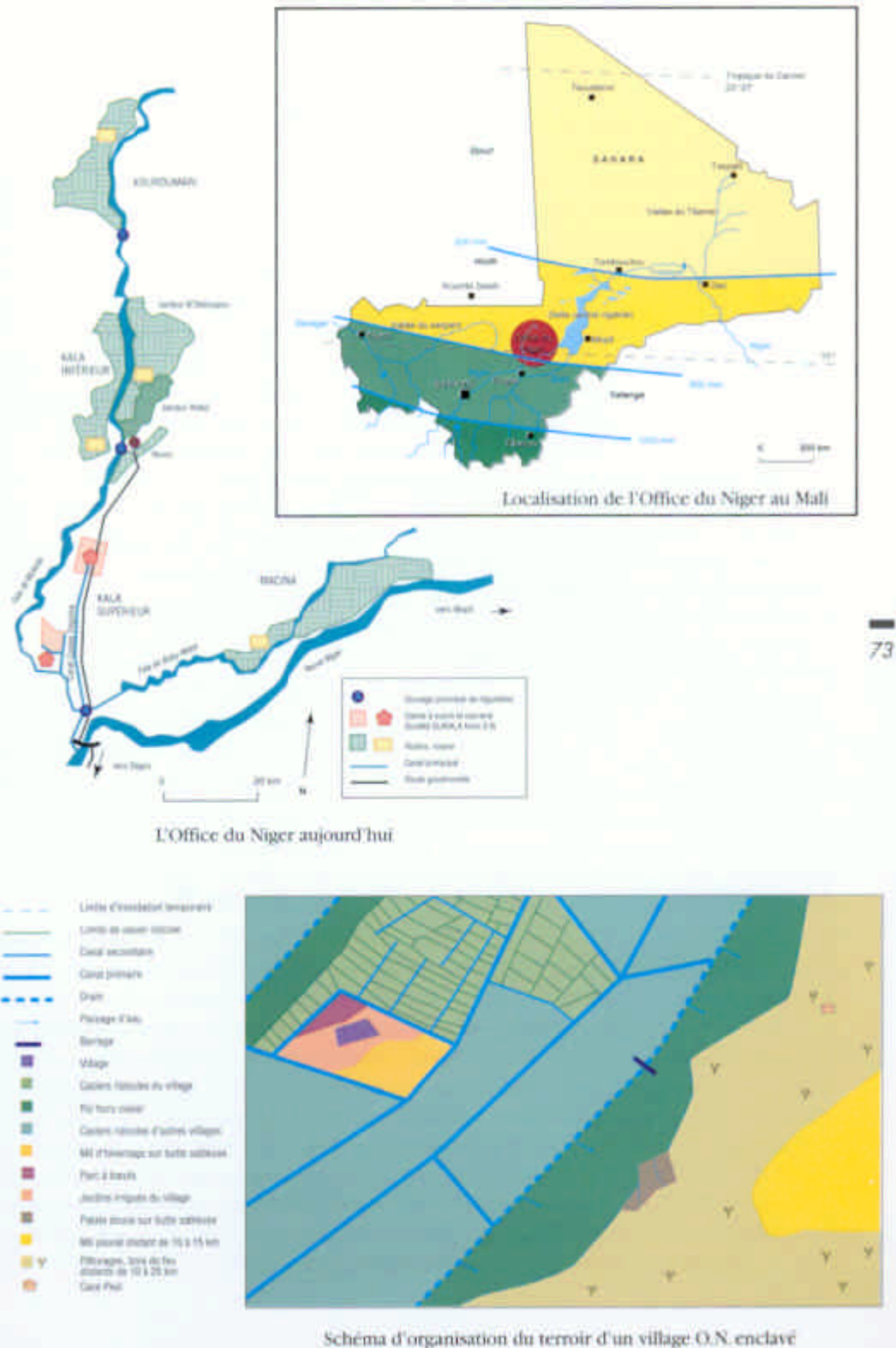


Fig. 1. The Office du Niger : localisation and physical irrigation network (Jamin and Doucet 1994)

## **II. THE OFFICE DU NIGER: A LARGE-SCALE GRAVITY IRRIGATION SCHEME IN THE INNER DELTA OF THE NIGER RIVER**

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### **1. The Niger Valley: the Heart of an Old African Water Civilization**

Along with the Nile and Senegal rivers, the Niger is one of the most important watershed areas in the northern part of Africa. It waters large arid lands in the Sahel where annual average rainfall is around 400 to 800 mm. The Niger river comes from Fuuta Jallo rainy mountains in Guinea and makes a large curve in central and northern Mali before crossing Niger and Nigeria to reach the sea.

In the central part of its catchment area, the Niger river spreads over a large plain, the Delta Central or Inner Delta which has two different parts: the eastern side or “delta vif” (living delta, with the main stream) and the dry western side or “delta mort” (dead delta)—a heritage of geology and paleo-hydrology—which is not naturally flooded.

During the long medieval period, the large, rich wetlands of the “delta vif ” was home to great merchant civilizations and crowded urban zones<sup>5</sup> connected to the trans-Saharan trade roads. Complex and dynamic systems for using nature were in place, and different socio-ethnic groups practiced a mixture of flood and rainfed agriculture, pasture and fishing, within “leydi” (socio-political units). It seems that some hydraulic works were built in older times. In the early 19<sup>th</sup> century, the Masina Fula kingdom enacted the Diina which reorganized a contractual sustainable natural resource management system within the framework of socio-political organization.

### **2. The Office du Niger Scheme: Irrigation by Gravity with a Diversion Dam on the Niger River<sup>6</sup>**

#### **2.1 Population Concentration in the Irrigated Area**

The inner Delta of Niger contains three main homogenous areas:

- ✂ The western irrigated area: 9,700 km<sup>2</sup>, *Office du Niger* and Sukala, 31 inhabitants per km<sup>2</sup>;
- ✂ The central dry area: 1,100 km<sup>2</sup> with rainfed agriculture, 4 inhabitants/km<sup>2</sup>;
- ✂ The eastern Niger river flood recession area: 7,400 km<sup>2</sup>, 19 inhabitants/km<sup>2</sup>.

The *Office du Niger* is in the “delta mort”, which was a flat and quite unpopulated area. This area is the western part of the Niger paleovalley which was not naturally flooded because of the long trend of decreasing Niger river flow. A dam build at Sansanding-Markala sends water once again in two main old natural branches called “fala” on the left side of the Niger river, in the direction of northern Kouroumari and north-eastern Macina.

The western area (the irrigated area) is the economic motor for the entire region with 66,000 developed ha but only 51,000 cultivated ha (77%)<sup>7</sup>. 55,576 ha belong to the *Office du Niger*,

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<sup>5</sup> i.e. Jenne Jenno, see archeological works of Mc Intosh, S.K. and R.J. 1980.

<sup>6</sup> The *Office du Niger*'s *Schéma Directeur*, March 2000.

<sup>7</sup> *Schéma Directeur*; 2000.



7,000 ha to the parastatal sugar companies Sukala and Covec and 4,000 ha to private farmers. The spontaneously occupied ‘*hors-casier*’<sup>8</sup> area is not well known, but it represented more than 10% of total irrigated areas in 1997. Still, the *Office du Niger* takes up only a small part of Niger’s Delta Central and 318,750 hectares could be irrigated with the existing infrastructures<sup>9</sup>. New perimeters (4,600 ha) are in progress, 12,000 ha are under study and 1,400 new ha will be cultivated in 2000.

Family farmers cultivate 51,000 ha. The number of demands is widely increasing with demographic pressure and recent economic performances. The average area per family member decreased from 7 ha in 1980 to 3 ha in 1999. This is partially the result of rehabilitation projects: reducing the cultivated area per family was chosen to provide incentives for intensification. It was largely balanced by intensification and high yield increases during this period. However, it is also the result of subdivision of land between sons at the death of the farmer and continuous fragmentation could compromise the profitability of irrigation.

Three kinds of land holdings are present:

- ✂ Small ones have only 1.7 ha of irrigated rice, they practice intensification, but achieve low yields and have others activities.
- ✂ Medium ones have 5 ha and they are able to accumulate capital with rice production.
- ✂ Large ones have 15 ha and invest in agriculture and other sectors (transport, etc.) with other sources of income (trade, civil servants’ wages, etc.).

## **2.2 Irrigation and Drainage Technical System**

The water management system is based on gravity irrigation from the Markala dam on the left bank of the Niger, through a main supply canal to point A and from there to two main branches. The Macina branch and the Boki-Were fala<sup>10</sup> provide water to the Macina zone (Sossé Sibila, Niaro, Boki-Were, Kokry and Ke-Macina perimeters). The Kala branch or Sahel system with the Molodo fala provides water through three channels to four zones: Niono, Molodo, Ndebougou and Kouroumari. An intermediate artificial system built in 1979, named the Costes-Ongoïba<sup>11</sup> canal provides water to the sugar-cane complexes of Sukala (which is now out of the *Office du Niger* zone). Other parts of the inner delta are not flooded (Mema, Kokeri, Farimake, and Kareri). Two important regulation works—points B and C—are located in the Sahel sector towards the northern Kouroumari zone with three ‘biefs’.

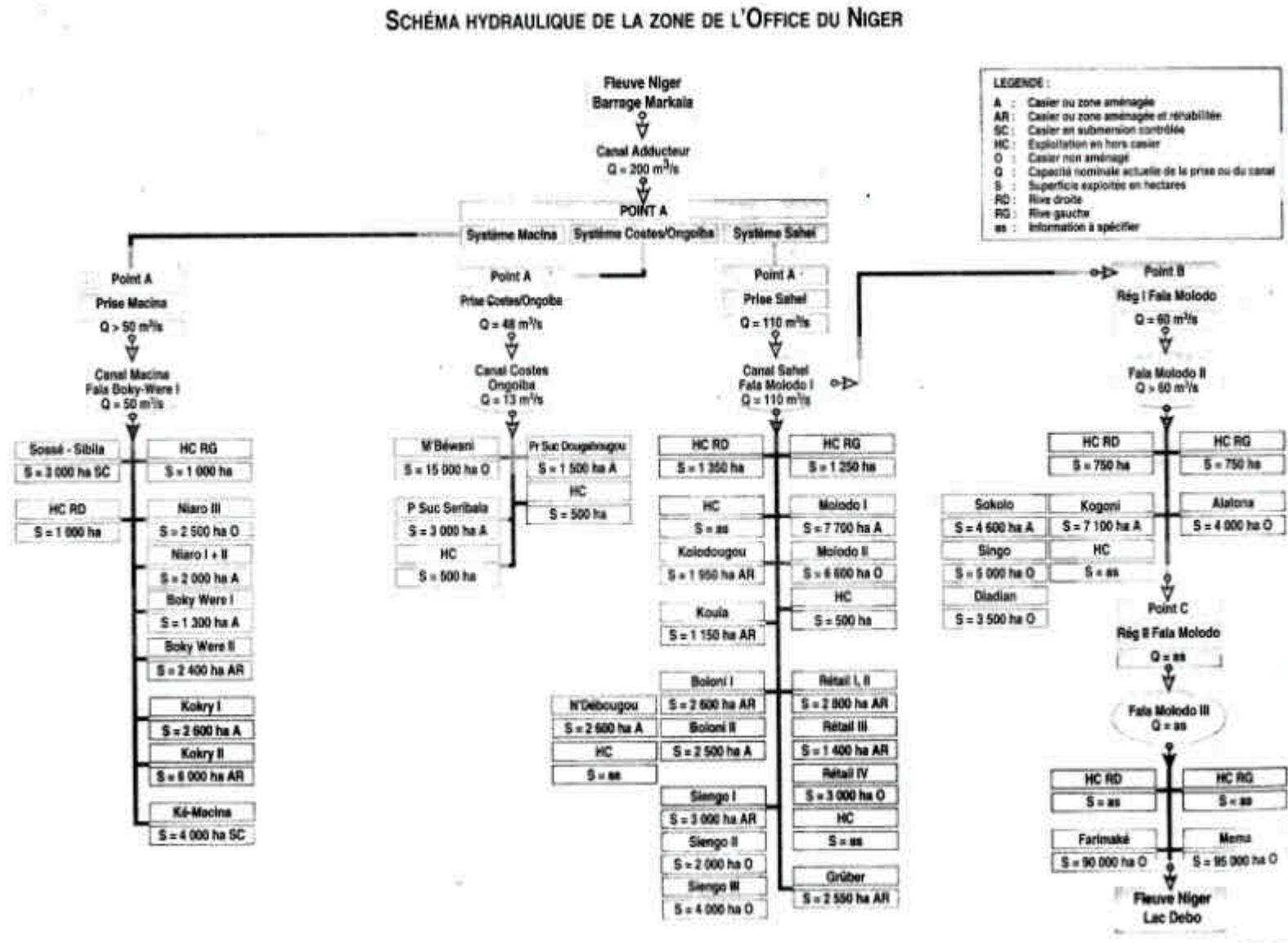
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<sup>8</sup> Fields outside the official irrigation scheme irrigated with water taken from channels.

<sup>9</sup> The *Office du Niger*’s *Schéma hydraulique* (hydraulic plan). ARPON III, 1997.

<sup>10</sup> A ‘fala’ is an old branch of river.

<sup>11</sup> Costes: French colonial engineer, Ongoïba: former general director of the *Office du Niger*.



✍ **Table 1. Main Hydraulic Infrastructures in the Office du Niger<sup>12</sup>**

Canal	Construction Date	Output (m3/s)	Surface Irrigated	Potential <sup>13</sup>
Main supply canal	1935	200	-	-
a) Macina	1935	50	18,000	25,000
b) Sahel (3 “biefs”)	1937	110	40,000 (2 biefs)	200,000
c) Costes-Ongoïba	1984	13 (theoretically: 48)	5000 ha	23,000 ha
Total <sup>14</sup>			<b>63,000* ha</b>	<b>248,000 ha</b>

\* excluding “hors-casier” lands

A navigation canal (Thio) on the right bank makes it possible for boats to sail around the Markala dam on the Niger river.

Water goes to the fields by gravity, through waterworks, watergates and sluices from primary (*distributeurs*), secondary (*partiteurs*) and tertiary canals (*arroseurs*). An embedded tertiary-level system of drainage carries water away. The *Office du Niger* scheme is a simple gravity system with full water control. Its management is considerably more complicated. Excess water is now the main paradox because of soil saturation and the rise of the water table (more than 40 meters in 60 years).

In the *Office du Niger* scheme, five zones of irrigation management (Macina, Niono, Molodo, Ndebougou, and Kouroumari) have been made autonomous to simplify the management of water and allow better water control reactions and adjustments.

Many other very diverse irrigation schemes exist including an old flood control system in Segou and Mopti and numerous modern motor pump irrigation schemes in the Niger valley that are completed by diverse village small irrigated perimeters in the Timbuktu, Gao and Mopti regions.

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<sup>12</sup> *Office du Niger*, 1997.

<sup>13</sup> The goal of a million irrigated hectares seems to be a myth: scenarios are limited by the flow variability of Niger river and downstream needs.

<sup>14</sup> The total can differ from one source to another because of the spontaneous “hors-casier” fields (4,000 to 10,000 ha) and the estimation of potential.

### **III. THE LONG HISTORY OF AN AMBITIOUS COLONIAL SCHEME (1932-1984)**

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#### **1. Engineer Bélime's Dream**

Exceptional natural conditions (the Niger river's flow and flooding, a very flat plain) attracted European administrators at the beginning of the 20<sup>th</sup> century. Initial planning began in 1910. Emile Bélime, a French hydraulics engineer who had worked on irrigation in British Egypt, India and Sudan, proposed to implement a large gravity irrigation scheme covering one million hectares and use these important water and land resources for colonial purposes, *i.e.* cotton export to France who was too dependant on the United States and the British Colonies at that time. He followed the model of the Gezira scheme in Sudan.

The first tests were done during the 1920s but they were a failure, like Hirsch private big concession management<sup>15</sup>. Private capital was more interested in trading African products than in taking big risks in costly irrigation investments. European colonization and settlement was not possible since the region was less attractive than northern Africa. There were heavy debates about the project's realism from the beginning.

The main obstacle was the lack of population in the area. A structure, the *Office du Niger*, was created in 1932 to manage the project and settle people from the surrounding villages, the southern region and from other French colonies (such as the Upper Volta) using deportation and force. The Markala dam was built using forced labor in 1935-1947. Many of the workers died or fled but the latter was not possible for all settlers because of colonial police control, a lack of alternatives in their regions of origin or pressure by traditional hierarchy. Thus, new pluri-ethnic villages were settled little by little.

By 1940, the *Office du Niger* had become one of the largest colonial enterprises in West Africa with 200 expatriates supervising 6,000 African workers. Around 25,000 ha had been developed at a heavy cost<sup>16</sup>.

French Sudan Colony had to finance its self-investment program. It begged support from the French Metropolitan Government through engineers, private companies, and lobbying—the latter more focused on public markets. The myth of cotton irrigation—such ambitious goals (1 million hectares of irrigation) from such a low starting point without capital nor a labor force—guided agriculture and economic policy in Mali for a long time and oriented most public investments, contributing to foreign debt until today. Irrigated surfaces increased slowly because of the lack of financing, the low rhythm of labor immigration and the hard conditions of life for the African settlers. But the choice of creating a population of small owners and farmers involved in irrigation was the only way to implement industrial cotton production in Mali<sup>17</sup>. Because of the lack of a labor force, the *Office du Niger* sometimes wondered if it should opt for a mechanized state-owned company. Inland location and distance from ports made the cost of petrol too high and the famous French trans-Saharan railway project never came to be. The vision of engineers such as Emile Bélime, interpreted as “authoritarian

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<sup>15</sup> Coulibaly; 1997.

<sup>16</sup> Schreiger; 1984.

<sup>17</sup> Coulibaly; 1997.

colonial paternalism”, was long predominant in the professional ideology of the *Office du Niger*, even after Independence in 1960.

The main goal of the *Office* was to control a labor force to develop irrigation throughout its history until the late 1980s when farmers associations slowly became freer and the overall context changed. The *Office du Niger* was the most important enterprise, the heart of the State and also a “State within the State” in the French Sudan colony as well as in the young Republic of Mali. Many members of colonial, then African, managerial staff or the engineer corps in the *Office du Niger* held good positions in the administration in Mali. The *Office du Niger* was also an inevitable step in a managerial career. So a special place was given to this institution, even in research management, creating a corporate spirit. This tradition may continue for both the French and Malians.

## **2. The Permanent Failure of an Irrigation Model Based on Labor Control**

### **2.1 A Story Embedded in the Economic and Political History of Mali**

The aim of the *Office du Niger* has always been to contribute to the State budget through a rational optimization of the area’s high potential. Targeted productions and production organization systems varied according to political contexts. In particular, the history of the *Office du Niger* is characterized by a perpetual hesitation between two models: para-state direct management with farmers as a simple labor force, and small plot farmer irrigation under heavy state control. This hesitation drove farmers without land titles during all this time, under the domination and authority of *Office du Niger* staff and under the threat of being ejected if they did not obey to the staff.

**1930-1950/60:** Bringing in new workers to build the scheme and cultivate cotton was the first goal. Under the French colonial State, the main goal was to grow cotton for exportation to metropolitan France and to compete with British Commonwealth and American productions<sup>18</sup>.

But irrigated cotton needs good planning and precise water management. African colonialists had no experience in irrigation and no interest in cotton. They were closely controlled by monitors from the *Office du Niger* in order to make them follow agronomic and hydraulic instructions but many tried to escape this control. They also tried to limit their investments in the cotton fields, grow rainfed agriculture and herd cows outside the irrigated area—they had to feed themselves after the first “installation” year when food was given to them<sup>19</sup>.

Given the poor results of cotton and the political situation in French Indochina<sup>20</sup>, the focus was then put on rice production to provide a cheap food to other French west African farmers specialized in other export cash crops such as oil peanuts. However, yields remained low (around 1.5 t/ha).

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<sup>18</sup> Coulibaly; 1997.

<sup>19</sup> Jamin; 1994.

<sup>20</sup> Indochina was the French colony in Vietnam and the major supplier of rice to metropolitan France. World War II, Japanese occupation and the Independence movement interfered with this previous colonial situation.

After World War II, rice farming and sugar cane industrial cropping were the main crops and cotton-cropping decreased. Due to poor economic results, the infrastructures were not maintained and they suffered from degradation.

The *Office du Niger* had a strict monopoly on collecting production and processing cotton, paddy and sugar cane. It set the crops to be grown. The inputs to be used were given to the farmers on credit. It collected the products to be processed in its own factories. Farmers earned only the net product (production value less input costs) in a context under which sector inefficiency and the political choice of low-price products made the prices paid to the farmer very low. In case of very low yields, farmers were expelled from the *Office du Niger* and would lose their houses at the same time as their fields. Cultivation incomes were so low that farmers tried to back out of their obligations with passive resistance and by working in rainfed or “*hors-casier*” irrigated fields. A lot of them tried to flee back to their home villages<sup>21</sup>.

The system became a bit more flexible after 1945, with the political opening (the end of forced labor) and the pre-independence period that saw the creation of the farmers union SCAON<sup>22</sup> and the political rise of USRDA<sup>23</sup>. By 1960, around 55,000 ha had been developed but only 40,000 ha were cultivated.

**1960-1968/73:** The independence of Mali and the federation of Mali with Senegal were proclaimed in 1960 by the two socialist-inspired Presidents, Mamadu Dia and Modibo Keita. Agriculture was the main goal. Between 1961 and 1966, the *Office du Niger* received 30% of the public investment budget in agriculture (11% of total investments). Cotton and rice were to be grown at the *Office du Niger* for national capital accumulation and the beginning of industrialization from a socialist perspective. But Mali was isolated after the breaking off the Federation after French pressure on Senegal. The main railroad from Dakar to Bamako was cut. Petrol prices were increasing too much for motorization and the export road for cotton and rice was cut off. Food self-sufficiency became the production aim.

But water delivery was quite poor and yields were always low. After the mobilization of the SCAON Union, farmers expected a lot from Independence. But the Government quickly forgot its promises and oriented the *Office* towards a collectivist and industrial organization—the opposite of the crop diversification, land security, autonomy in production and freedom of trading expected by the settlers. To catch most of the added value, the barrier guards (“*Gardes-barrières*”) and economic police (“*Police économique*”) were everywhere to control the flux of products and keep the monopoly of the Office on the production. Little by little, settlers joined with the traders and left USRDA. Abuse by the *Office du Niger* servants pushed them towards the camp of the army responsible for the coup d’état in 1968.

**1968/73-1984:** After Moussa Traore’s coup d’état, irrigated cotton was given up and efforts focused on rainfed cotton in the south. The emphasis was placed on rice for national self-sufficiency, especially for towns. Drought in the Sahel pushed refugees into the *Office du Sahel* area but most of them did not gain access to irrigated land and stayed as temporary wage laborers working for the settlers. The military government kept the nationalist orientation during the first years but not the collectivization. The state farms were progressively dismantled and land started to be distributed among farmers. The price of paddy was increased. But State monopolies remained and verifications by the economic police were

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<sup>21</sup> Jamin; 1994.

<sup>22</sup> SCAON: Syndicat des colons agricole de l'Office du Niger (the former Farmers Union).

<sup>23</sup> USRDA: Union Soudanaise - Rassemblement démocratique africain (the independentist movement).

intensified<sup>24</sup>. The *Office* kept its authoritative management. Corruption, nepotism, and bad governance practices increased.

Development strategies with ideological points of view (“mise en valeur coloniale” (colonial development), socialist planning, agricultural accumulation for national industrialization, etc.) has always marked the *Office du Niger*’s style of management. The authoritarian and paramilitary system was present from the beginning to the 1980s and reflected the rejection of farmers’ own strategies and family structure logics. Irrigators are not simply workers. Ignorance of farmers’ economics was permanent and the institutional arrangements, like the Indigenous Associations promoted in the fifties, were not deep enough to change the resistance of farmers. Land use was total even though irrigators could not manage the destination of their own productions.

## **2.2 A Long Failure**

From its beginnings, the *Office du Niger* was the most ambitious state project and swallowed a large part of public investments. Given its complete financial autonomy and its legal status, controlling all activities in its area, mobilizing the major part of the population, and particularly authoritarian in its practices and relations with farmers as workers on their plots, the *Office du Niger* structure was long seen as “a state within the state”, with overcrowded staff endowed with a high corporate spirit.

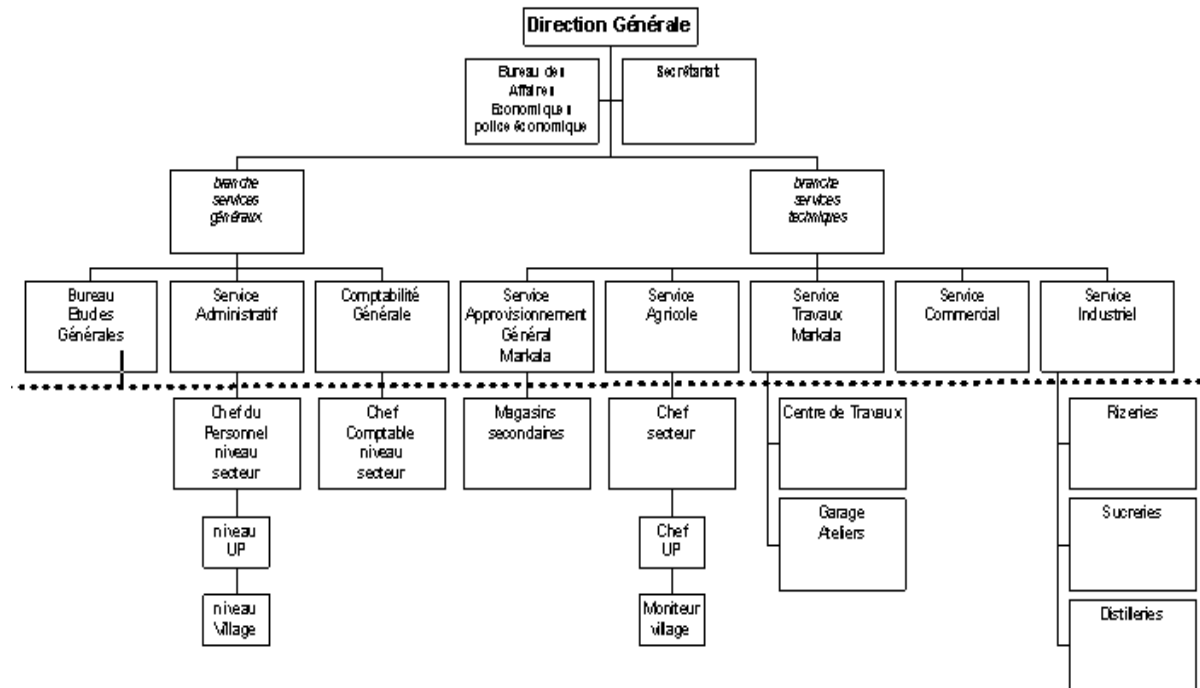
Throughout these different stages, the *Office du Niger* stayed marked by a vision of irrigation as “rational” use of physical potential by a technocratic/state organization, with settlers acting more as workers than as autonomous farmers. The whole system was based on constraint and compliance with instructions from *Office* staff members and directed towards goals linked to external purposes (colonial metropolis, emerging central State). Rural workers were displaced and maintained in an authoritarian system of production, thought of as simple workers in so-little-performing industrial agriculture, with dependant and precarious status for land tenure, housing and relief. The general failure of this system and its low productivity contributed to the regular degradation of the infrastructures and to large-scale desertions by settlers. With such low performances (irrigated area, yields, farmers income, irrigation efficiency, etc.) and the financial crisis (impact on the national budget), the *Office du Niger* was a permanent burden on the State and donors. At different times during these 50 years, the question of whether or not to close the *Office du Niger* was raised and became more crucial with the State’s financial crisis in the 1980s.

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<sup>24</sup> Jamin; 1994.

Fig. 3

**Office du Niger's Organisational Structure at the End of the 1970's**  
(source: Office du Niger, ARPON, 1997)





#### **IV. RESTRUCTURING THE OFFICE DU NIGER: STEPS AND COMPONENTS**

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At the end of the 1970s, a third of the developed area was no longer cultivated. Average paddy yields, which had sometimes reached 2.5 t/ha<sup>25</sup>, remained about 1.5 t/ha. Infrastructures had degraded. Because of poor performance and a large staff, the cost of the *Office du Niger* for the national budget was very high - around 8 billion CFA francs per year. One could wonder whether, in terms of rural development strategy, it should be closed and the State subsidies reoriented towards others sectors (small dams, pumping irrigation, rainfed cotton in the South) and regions (South). But, given the issue of irrigation and water control, the long period of drought, the necessity of water control in a Sahel country and the amount of investments already made, it was not possible to close it. Trying to reform the *Office du Niger* was the only option. A Conference was held in November 1979 under the presidency of the head of State about the *Office du Niger*'s future.

After the long Sahel drought (1973-1985), Mali was completely dependant on international food aid programs. The issue of self-sufficiency was crucial, as was the problem of budget deficit. The government of Mali and Bretton Woods Institutions signed the Agricultural Structural Adjustment Program (ASAP) and the Economical Restructuring Program (ERP) in 1982<sup>26</sup>.

##### **1. The First Attempts at Rehabilitation and the Restructuring Decision (1979-1982)**

The first attempt to improve the situation focused on water availability and management: physical rehabilitation and technical advice for water management were supposed to improve productivity. The first World Bank rehabilitation project (through only funding and consulting for the *Office du Niger*) at the end of the 1970s was a failure. Two Dutch projects, BEAU<sup>27</sup> and GEAU<sup>28</sup>, focused on water management and provided new references to improve rice irrigation. It became obvious that the main stumbling blocks did not lay only in the infrastructures but in the model/system itself.

The decision to restructure the *Office du Niger* was made in 1982 as a part of the ASAP/ERP through the PRMC (*Programme de Restructuration du Marché Céréaliier* – Cereal Market Restructuring Program). The political and financial pressure from donors and Bretton Woods institutions was crucial. But the political decision was made at a very high level in the Malian State machine and was confirmed after the 1991 Revolution and the 1991-93 Transitional

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<sup>25</sup> During phases of economic liberalization, for example at the beginning of the Traore regime (Amr, 1995).

<sup>26</sup> Office du Niger-Arpon; 1997.

<sup>27</sup> Besoins en eau (water needs), 1979-1981.

<sup>28</sup> Gestion de l'eau (water management), 1981-1984.

Government. The restructuring process was managed under the supervision of the Prime Minister, and no longer by the Ministry of Agriculture. The donors working on irrigation projects (mainly the World Bank, and Dutch and French overseas aid agencies) agreed about the need for profound institutional reform. In order to have concrete impact, field projects were launched by Dutch Overseas Aid (the ARPON Project<sup>29</sup>) in 1983 and then by French Overseas Aid (the Retail Project<sup>30</sup>) in 1985.

Donors agreed on the main goals:

- ✍ Improve the productivity of irrigation by intensification, which needed improved physical infrastructures (which were highly degraded) and economic incentives for farmers;
- ✍ Liberalize the rice sector;
- ✍ Reform the *Office* by aiming its functions at water services and networks maintenance and by privatizing all its others functions.

Malian state and donors tried to reform the Office du Niger twice. The Office got the EPIC<sup>31</sup> status in 1981 and again in 1989<sup>32</sup>. A first performance contract was prepared and signed at the end of the 80s but was never implemented<sup>33</sup>. These first unsuccessful trials are now forgotten but it shows that institutional changes only are not enough to restructure an institution.

## **2. Rehabilitation and Economic Incentives for Intensification (1983-1994)**

The aim of the first stages was to create intensification through better water control provided by rehabilitation and with the generalization of transplanting. It was achieved with the first changes in the micro-economic context giving farmers incentives to intensify.

### **2.1 Physical Rehabilitation**

Physical rehabilitation was one of the main goals of the ARPON and Retail field projects. At the start, they had quite different strategies that more closely sought experience exchanges and harmonization of technical norms between the *Office du Niger*, research institutes, donors and international aid agencies<sup>34</sup>.

#### ✍ **Table 2. Comparison of ARPON and Retail rehabilitation methods**<sup>35</sup>

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<sup>29</sup> ARPON: Amélioration de la riziculture paysanne à l'Office du Niger.

<sup>30</sup> Retail: name of a French colonial engineer given to an irrigation sector in the Niono zone.

<sup>31</sup> Etablissement public à caractère industriel et commercial.

<sup>32</sup> Ordonnances n° 81-3/1-RM du 28 avril 1981 and Loi n° 89-06 (08?)/AM-PM du 18 janvier 1989 giving EPIC status to the *Office du Niger*.

<sup>33</sup> Personal communication of Guy François, BRL engineer involved in the preparation of the performance contract.

<sup>34</sup> Barral J.-P., in PSI-CORAF, 1998.

<sup>35</sup> The *Office du Niger's Schéma Directeur*, March 2000.

<b>Field</b>	<b>ARPON Project (Dutch Overseas Aid)</b>	<b>Retail Project (French Overseas Aid)</b>
Roles of Stakeholders	Rehabilitation the basic secondary network without intervention at field level: project role Planing and subdividing plots: farmers role Operation with enterprises and in the hands of ON trustees (management)	More sophisticated turn key method: rigorous planing plot subdivision bank reinforcement with laterite
Evolution in Yields	from 1 to 3-4 t/ha	from 1 to 6 t/ha
Problems	Quick Degradation	Towards Simplification
Cost	Rehabilitation and maintenance cost must be recovered by ON	12,000 US\$/ha in 1990 Cost reduced to 6,000 US\$ in 1995 and lower after
Perspectives	Medium term Primary and secondary rehabilitation and maintenance paid by ON irrigation fees Field development and tertiary rehabilitation under farmers responsibility (the latter included in rehabilitation if degradation is too important) Surfacing paddy field preferred to planing Implementation of these rules would facilitate investment planning and management of irrigation fees by ON	

✍ **Table 3. The main projects at the *Office du Niger***<sup>36</sup>

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<sup>36</sup> The *Office du Niger*'s *Schéma Directeur*, March 2000.

[illegible]

\* Agricultural Input Fund (*Fonds d'Intrants Agricoles*), became the Village Development Fund (*Fonds de Développement Villageois*).

### Others Rehabilitation Projects:

European Development Fund (EDF) 1989: 65 M€

German KFW 1988: 55 MDM:

FAC France: 1981-1996: 72 MF (technical assistance).

Rehabilitation programs absorbed a major part of external financing aid for development. After the 1991 Revolution and the 1994 CFA franc devaluation, subsidies replaced loans as a consequence of the difficult political choice for a new democratic regime coming from youth revolt. However, water fees stayed at a low level and even lessened just after the political events.

After rehabilitation, three kinds of fields were defined with different levels of fees (Class I to III) depending on the quality of the water service:

- ☒ with a double crop of rice;
- ☒ with only one crop of rice;
- ☒ with one crop of rice and the possibility of vegetable market gardening.

The assessment of rehabilitation performances shows that not all the technical problems have been solved yet. Because of excess water and salinization-sodisation of soils, it proved necessary to improve the drainage system and evacuation towards lakes and the Niger river. Weeds like *Typha sp.* and others in canals decrease the hydraulicity of canals. O&M at the tertiary level is not well practiced by new irrigator organizations.

Rehabilitation made it possible to use less water: about 30% in Retail project fields. However, too much water is still wasted with the system. Increasing water efficiency and keeping water for other uses (environment, fishing, grazing, etc.) and downstream areas, and for expansion or rehabilitation of old irrigated perimeters is necessary.

## **2.2 Farming System Intensification**

In a situation of abundant and cheap water (which is not the main limiting factor), only intensification, increased labor productivity and farmers' incomes, and new distribution of surplus could improve the situation.

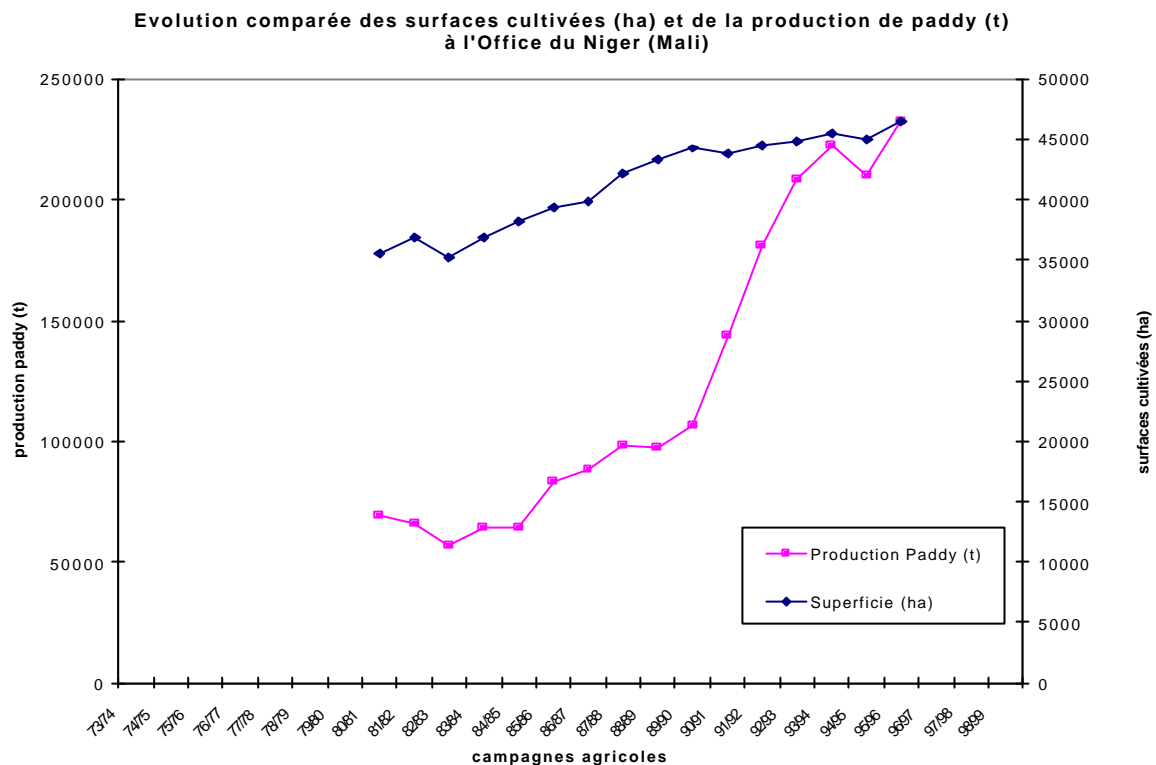
The aim of the projects was to stimulate intensification through the use of new high-yield rice varieties, generalization of transplanting, and use of fertilizers. Better water management (controlling water levels and flows with new sluices and the organization of irrigation (coordination and roles of lock keepers, water inspection agents and *arroseurs* chiefs) was necessary. Double cropping had to be encouraged where possible.

Because of the labor constraint and demographic pressure, fields were redistributed in smaller plots after rehabilitation. It was supposed that family workers were not enough to intensify the formerly larger area. Farmers agreed to this condition because they wanted rehabilitation.

Extension and training were provided to farmers on the new techniques<sup>37</sup>. Transplanting was an obligation at first. All of these agronomic and water management innovations passed quickly into farmers' practices. Even farmers in non-rehabilitated areas tried to benefit from these opportunities and began to subdivide their plots to allow better water control and transplant rice. In 1995, 77% of the paddy fields were transplanted.

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<sup>37</sup> The training center was built in 1983 by Dutch Overseas Aid.



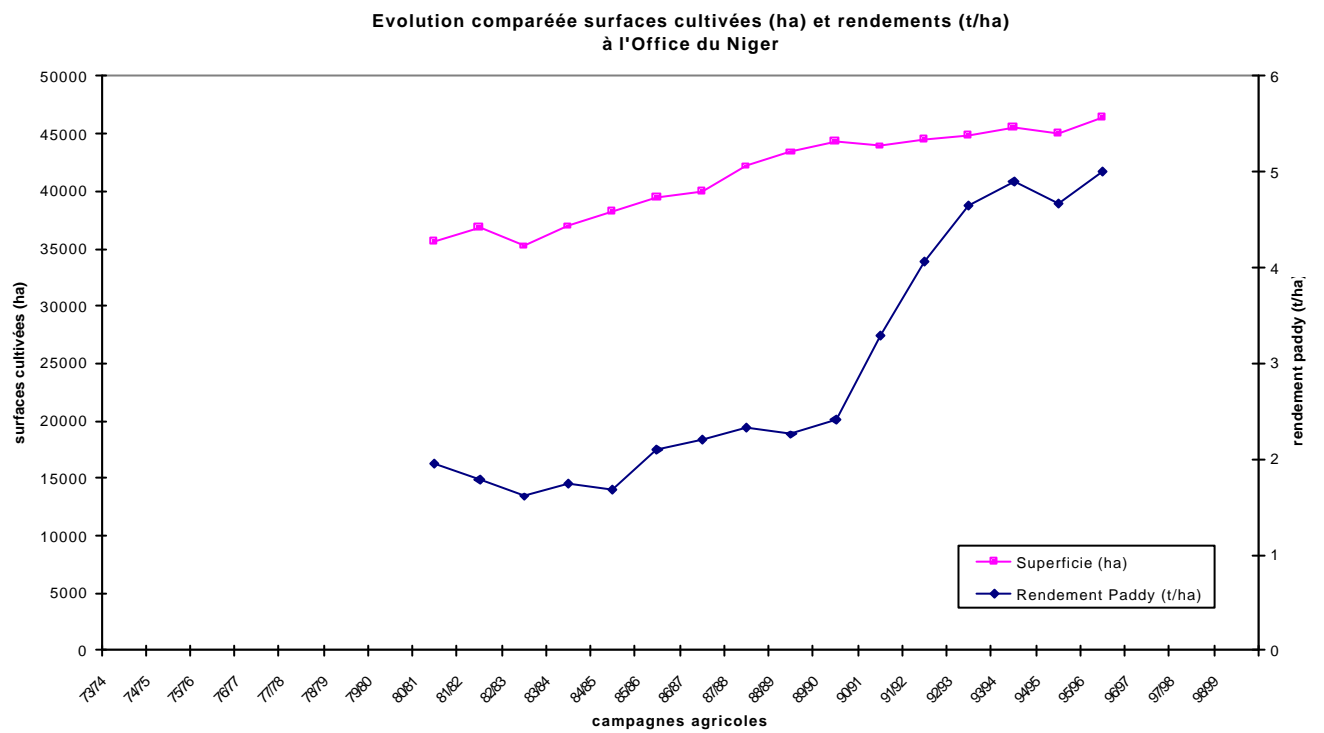
Intensification is not a direct consequence of physical rehabilitation (the extension of transplanting had been a failure in the 1960s); it was also the result of changes in the economic context—to give farmers intensification incentives, the economic police was suppressed, prices were raised<sup>38</sup>, and access to credit was made possible through the creation of Village Development Funds (VDFs, former FIA). In 1983, the ARPON project helped to create small-scale threshing units, giving the farmers and farmers organizations a larger share of added value<sup>39</sup>.

The reform of the *Office du Niger* had to go from hydraulic and agronomic success to economic and financial success. The economic target has been reached but financial balance has not yet been reached because of low water fees.

<sup>38</sup> From 50 CFA francs/kg in 1982 to 70 CFA francs/kg in 1986—an increase of 40% (the World Bank, 1996).

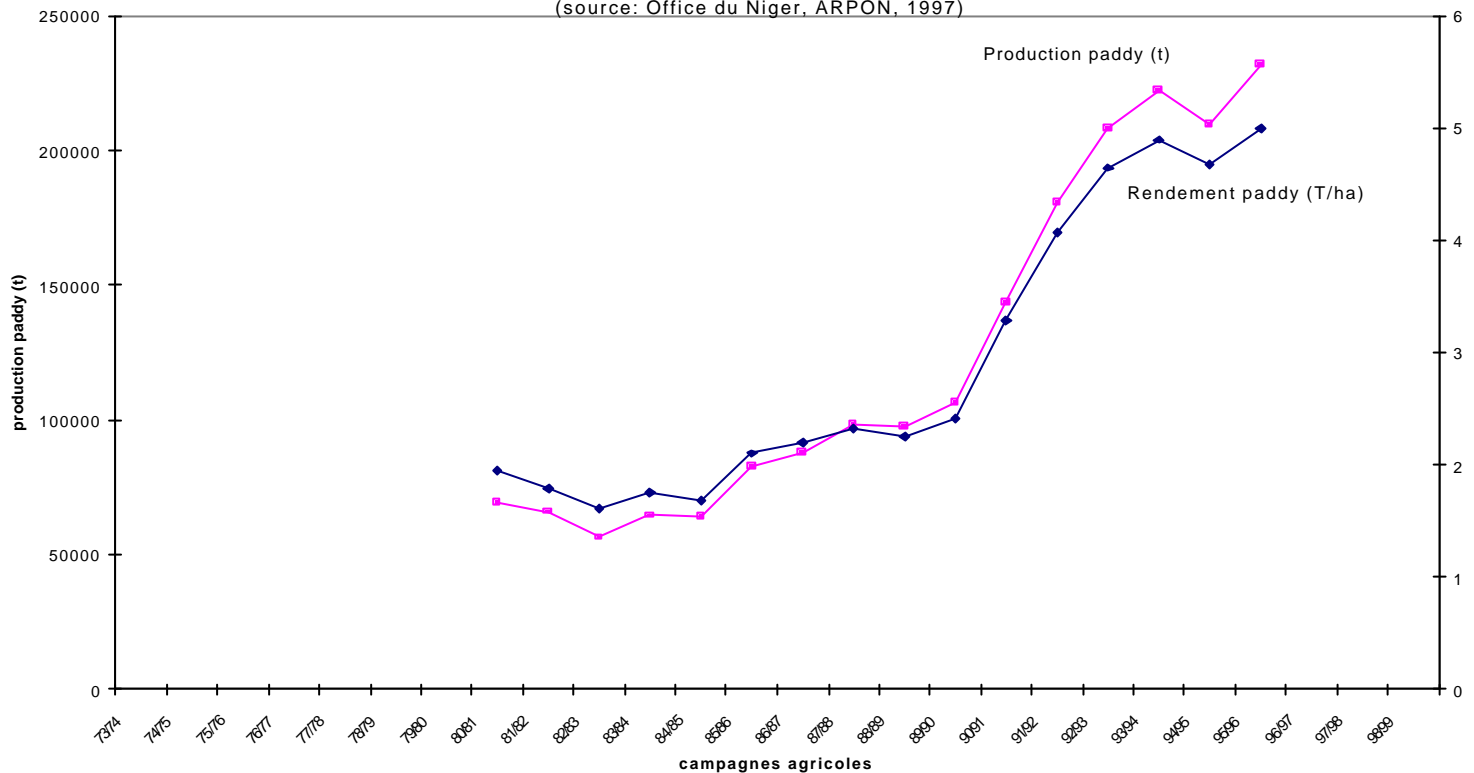
<sup>39</sup> Sourisseau, 2000.







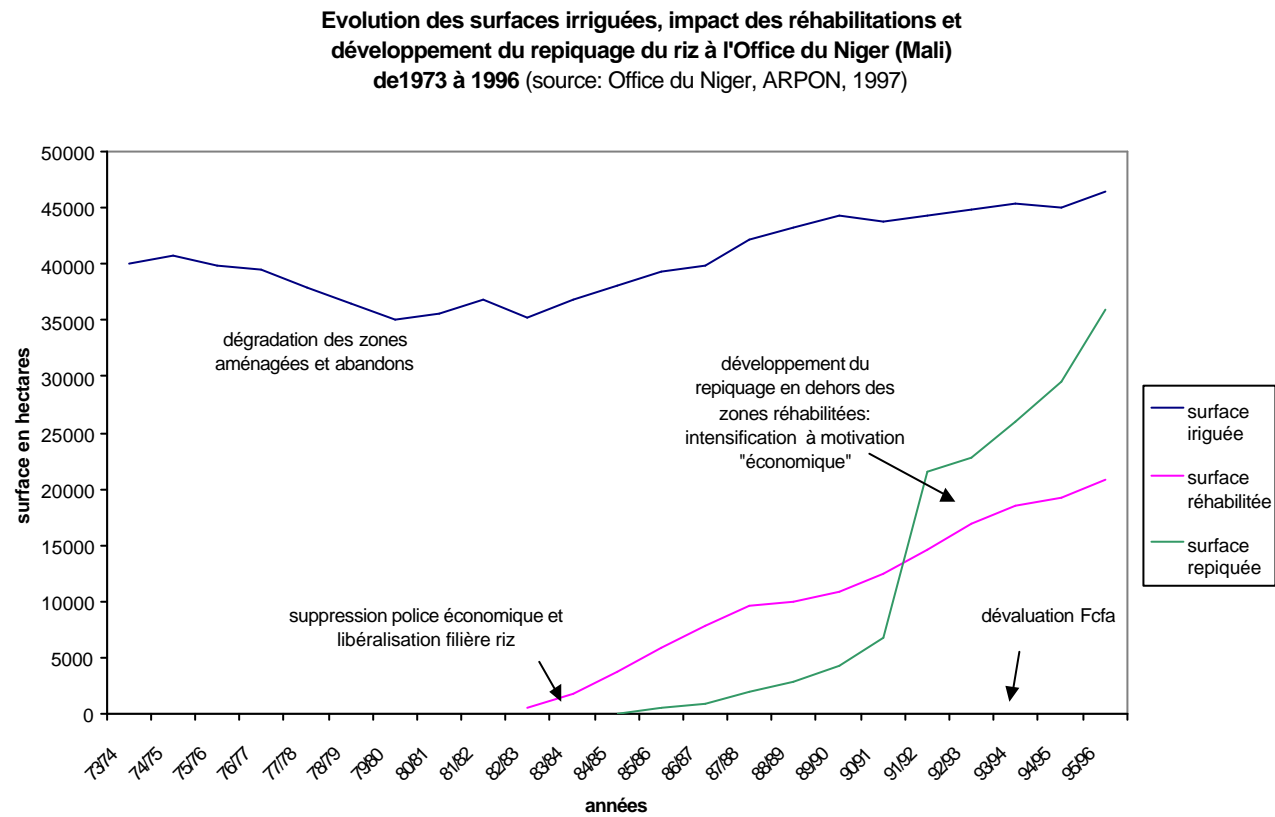
**évolution comparée de la production totale de paddy (t) et  
du rendement en paddy (t/ha) à l'Office du Niger**  
(source: Office du Niger, ARPON, 1997)



Figures 4, 5, 6. Compared evolution of paddy yields and production.

(sources: Office du Niger-ARPON, 1997; Sourisseau, 2000; Goro, 1998)

Fig. 8



### **3. Privatization and Institutional Reform (1986-1996)**

The first steps in restructuring made it obvious (to those who had not been convinced from the start) that drastic institutional changes were needed. These reforms began with paddy processing and commercialization. The general goal was to privatize or transfer all the *Office*'s economic functions to farmers organizations and concentrate its activities around its core functions—water services, planning and maintenance. Its different activities were progressively privatized. The reform reached the point of no return in 1994, when law n° 94-004 dated 9 March 1994 closed the old *Office*, decided on the privatization of the last activities, and created a new *Office* under contract with the State. The 1994 devaluation of the CFA franc boosted the regional economy. Privatization was fully completed in 1995-1996 during a transition period with liquidation of assets managed by a firm of auditors..

#### **3.1 Liberalization of Paddy Processing and Commercialization**

The *Office*'s withdrawal from the role of economic police force in 1984-85 and the expansion of small farm threshers set off a firmer process of withdrawal. The *Office* resisted sharply and kept monopolistic control over rice paddy processing through five industrial rice-processing factories (Kolongotomo, Molodo, Kokry, N'débougou, and Dogoféry) that pulled most of the production towards it in 1990. The private commercial sector—little prepared and fully dominated by a clientelist logic—was unable to offer a credible alternative for processing and commercialization. The farming sector was not collectively organized for this. And yet, a decentralized (and therefore closer to farmers and more easily controlled by them) response—with the promotion of village hullers—is what made it possible to withdraw the processing function through two generations of small motorized equipments owned privately, mainly by individual men and by VAs.

One quarter of factories' 10,000-tons-per-month processing capacity (*i.e.* 2,500 tons per month) was used, processing only 4% of the production in 1993 compared to 67% in 1984. Privatization had a hard time finding a buyer and rapidly ended in failure. In 1992, more than 700 hullers were already present and each could process 100 to 150 tons per year at qualities equivalent of those of factories for a processed volume of about 70 to 80 thousand tons or 40% of total production (180,000 t in 1992) This rate continued to rise until rice-processing factories closed in 1995. Thus, hulling was taken over by farmers who also recovered an additional share of added value<sup>40</sup>.

Total liberalization of the sector was completed with the 1994 devaluation, which made the *Office*'s paddy competitive and reversed the balance of power with traders. Farmers benefited from devaluation all the more because they kept the hulling margin. Their other activities (cattle rearing and market gardening) also benefited from it.

#### **3.2 The *Office* Refocused on its Essential Functions**

One of the guiding principles in restructuring based on the National Rice Sector Development Policy Letter ("lettre de Politique de Développement de la Filière Rizicole Nationale") of the 1994 law stipulates a "withdrawal of the *Office du Niger* from all commercial activities by

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<sup>40</sup> Office du Niger-ARPN; 1997.

transfer, long-term rental or liquidation for those that can not fulfill profitability conditions.” This law specifies the *Office du Niger*’s missions and responsibilities, sets the amount of state resources to be allocated and specifies the resources that are to ensure its operations.

The *Office du Niger* was refocused on water management and maintenance and the Extension service mission shall be undertaken mainly with the state budgetary donation managed by MDRE in the framework of the performance contract (“contrat-plan”) that lays down the parties’ engagements (the State, the *Office du Niger* and farmers).

Its budget was reduced from 6-10 to 2-3 billion CFA francs and structurally re-balanced; staff costs became 19% (0.5 billion CFA francs) instead of 10% (0.8 billion CFA francs) and TFSE (the French acronym for “works, supplies and external services”) rose from 5% to 68% (0.4 to 1.7 billion CFA francs). Material and supplies used, 68% of the prior budget or 5.4 billion CFA francs, fell to private supplier-farmer or *Office du Niger*-service provider (TFSE) contracts. The result is improved clarity and control and appeal possibilities.

### **3.3 Transfer of Other Activities**

The new *Office* must therefore transfer the activities not retained in its field of action, that is to say:

- ✍ Rice-processing factories that be sold to the private sector;
- ✍ The Village Development Fund, formerly the Agricultural Input Fund (*Fonds d'Intrants Agricoles*) whose mission was enlarged, initiated by the ARPON Project, is progressively to become a mutualist network of credit unions, the CRMD;
- ✍ The Works Center (“*Centre de Travaux*”) must be privatized and bought by companies that can provide construction, renovation and maintenance services under contract. They may be Malian or foreign, and associated or not; some were already consultancy firms made up of former *Office du Niger* executives;
- ✍ The Soninkoura farm;
- ✍ The Guest Center;
- ✍ The Training Center; and
- ✍ The seed farm.

Each of these units has kept the assets it needs to operate properly.

In order to balance the budget for these activities better, the State was ready to create private companies to take charge of their management and results. A rental-management formula was envisaged for the last two units that are harder to privatize. These transfer formulas can also be explained by the youth of farmers organizations that are unable to take over the operation of these structures that risk being costly in terms of staff, depreciation, etc. and whose size does not equal the abilities of the *Office du Niger*’s not-yet-federated farmers organizations.

Little is said about reclassifying *Office du Niger* staff, a large fraction of which has progressively left (retirement, resignations, creation of new jobs) in light of the length of the process; another fraction of departures was accompanied by incentives or compensation. The *Office du Niger*’s Workers Union (“*Syndicat des Travailleurs*”) was very active in restructuring.

### **3.4 The Birth of New Functions Alongside the Office**

Needs when it comes to training, management and legal advice, savings and credit, and diverse services both upstream and downstream in rice and market garden sectors brought about the creation of numerous small businesses and associations that employ young graduates and former (fired) *Office* staff.

By the middle of the 1990s, yields had tripled and production quadrupled. An increasing number of farmers had been installed thanks to upgrading. The *Office*'s budget balanced little by little, given the public service missions and primary infrastructure maintenance for which the State remained responsible. The apprenticeship in negotiating with producers progressed via different "representation committees" that were set up. VAs' indebtedness vis-à-vis credit systems remained a large source of uncertainty. This uncertainty was partially cleared up with the cleaning-up of credit in 1996-97. Private service providers in the field of maintenance were the last stakeholders to be included in the scheme.

The following section describes the current institutional framework.

## **V. CURRENT INSTITUTIONAL FRAMEWORK**

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The law no. 94-004 liquidated the old *Office du Niger* and created a new structure with the same name and with the status of an industrial and commercial public company ("*Etablissement public à caractère industriel et commercial*" or EPIC). This new *Office*'s mandate focuses on water services, maintenance of primary and secondary networks, and land administration. The other former functions of ON have been suppressed, transferred to farmer organizations, or privatized. The current institutional framework is now more complex with different kinds of actors with different responsibilities involved. Five main actors can be identified:

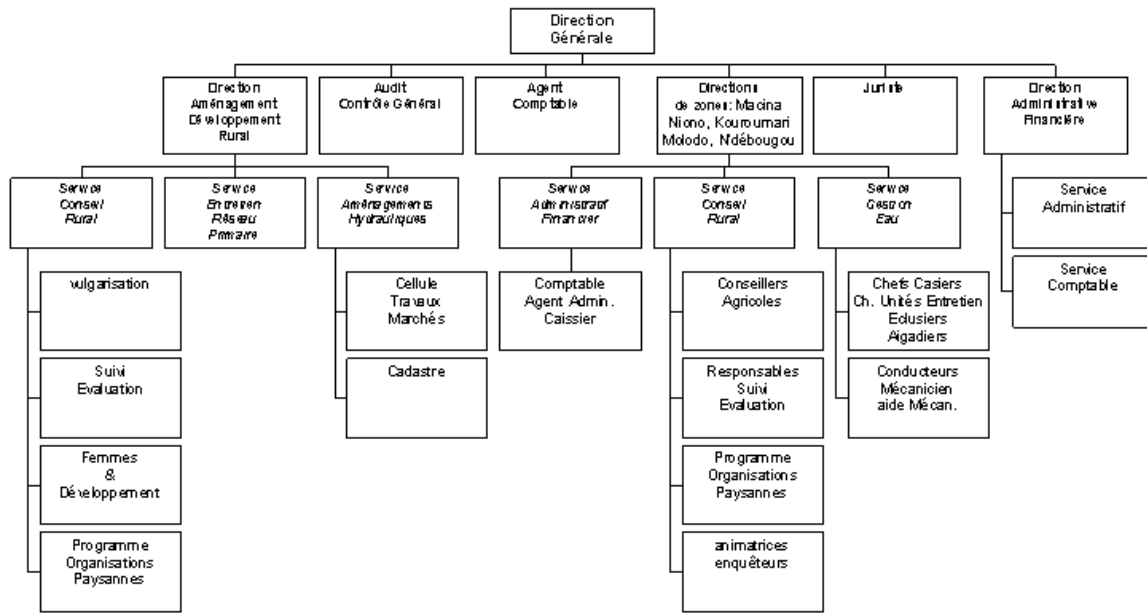
- ✍ Producers and their organizations;
- ✍ The EPIC *Office du Niger*, with now only 360 people on staff compared to more than 4,000 previously;
- ✍ The Central Administration;
- ✍ Donors;
- ✍ Different private or semi-private enterprises that provide services (works maintenance, training, etc.) or play a role in the sector.

The relationships between these actors are defined by legal texts and contracts. New institutions have been created to allow consultation between actors on some points. We will describe the main actors involved and the way they interact in this section.

Some new questions have been raised by the administrative decentralization and the creation of "*rural communes*" with land management responsibilities.

Fig. 9.

The Office du Niger's Organisational Structure after 1994  
(source: Office du Niger, ARPON 1997)



## **1. Legal Framework and Negotiation Between the Central Administration and the *Office du Niger***

The *Office du Niger* now has two important missions:

- ✍ water management and secondary network maintenance;
- ✍ a concession contract for a public service with delegated contract management (“*maîtrise d’ouvrage déléguée*”) for studies and hydraulic works, primary maintenance, hydro-agricultural O&M, land management, rural advising and assistance to farmers.

This mission is described in the National Rice Sector Development Policy Letter dated 15 January 1993. The *Office du Niger*’s new status gave a legal basis for these new roles.

### **1.1 Law n° 94-004 Dated 9 March 1994**

Clarifying responsibilities was necessary and accomplished with Law n° 94-004 dated 9 March 1994. There had been much debate about the kind of reform during the previous years<sup>41</sup>. The decision was made to close the former *Office* and create a new company with a new status but keep the same name.

The *Office du Niger*’s new status is that of an industrial and commercial public company under contract with the State. In fact, after the privatization of rice mills and economic liberalization, the *Office du Niger* is no longer “commercial” but no other legal status was available under Malian law.

The law defines the missions and powers of the *Office du Niger*, sets the amount of the State budget contribution to the *Office* (mainly for new infrastructure building and primary maintenance) and sets forth the nature of resources for the ON budget. The presidential decree n° 94-142/P-RM dated 31 March 1994 specifies the *Office*’s management bodies, their responsibilities and their missions. Advancing in the reform needed time to transfer the administrative supervision from the Ministry of Rural Development to the Primature (the office of the Prime Minister). The Ministry of Rural Development has been under deep reorganization from 1993 to 1998<sup>42</sup>.

- ✍ The rice factories, the work center, the Village Development Fund, the Soninkoura farm, the training center, the guest center, and the seed farm are no longer within the ON’s scope.
- ✍ Different private or semi-private<sup>43</sup> companies have been created to manage these new entities.
- ✍ For its own missions, the *Office du Niger* has to balance its budget through the collection of water fees. It also provides services for the State (studies and supervision of new works, maintenance of the primary network which has remained under direct State responsibility, training, etc.). It receives public funding for these public service functions. The cost to the State is now around 500 millions CFA francs per year for specific missions (compared to more than 3 billion per year prior to 1991).

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<sup>41</sup> Since 1981, the date of conception and implementation of PRMC (the Programme de Restructuration du Marché Céréalière – Cereal Market Restructuring Program).

<sup>42</sup> Camopa (Cellule d’Appui à la Mise en Œuvre du Plan d’Action), 1998. Recueil des textes législatifs et réglementaires portant sur la réorganisation du MDRE au Mali, Bamako, Tome I.

<sup>43</sup> The State can hold no more than 20% of capital.

Use of Funds (in million CFA francs)		%	Origin of Funds		%
<b>Infrastructure Maintenance</b>	<b>1,316</b>	<b>54.5</b>	<b>Irrigation Fees</b>	<b>1,825</b>	<b>77</b>
Primary	284				
Secondary	1,031		<b>Subsidies</b>	<b>531</b>	<b>23</b>
<b>Operating Expenses</b>	<b>1,072</b>	<b>45.5</b>	Extension Services	194	
Other public mission services	246		Delegated Contract Management	52	
Overhead	793		Primary Infrastructure Maintenance	284	
<b>TOTAL</b>	<b>2,356</b>	<b>100</b>	<b>TOTAL</b>	<b>2,356</b>	<b>100</b>

Table 5. Projected P&L Account for 1997 (2<sup>nd</sup> performance contract) (the World Bank, 1996)

## 1.2 State–Office du Niger–Farmer Performance Contracts

Performance contracts (“*Contrats-plans*”) are the main tools in the relationships between the State, the *Office du Niger* and farmers (represented by General Delegates). They define the qualitative and quantitative goals to be achieved within the contract period, and the commitments of the different actors.

Its aim was to put into practice the restructuring of the *Office* and to transfer responsibilities according to the application decree n° 94-142 P-RM dated 31 March 1994, which sets forth the functions of the different bodies of the new *Office du Niger* and the wide powers of its chief executive officer.

The first performance contract<sup>44</sup> was signed on 27 December 1995 for the following three years—1996 to 1998—and set forth the following goals:

- ✍ strengthening rice sector liberalization;
- ✍ continuing irrigated perimeter rehabilitation;
- ✍ intensifying farming systems;
- ✍ ensuring farmer status;
- ✍ farmers’ participation in representation committees for land and water fees and maintenance;
- ✍ a rigorous maintenance policy for sustainable infrastructures;
- ✍ improving monitoring and management methodologies.

The third performance contract between the State and farmers sets forth quantitative goals along the same lines for 1999 to 2001 period. The level of water fees is the main change and point of negotiation between stakeholders.

This tool allows for a negotiated definition of the goals to be reached by the *Office*. Since 1995, farmers are now part of this process and also sign the contract—a clear recognition of the role of farmers, and of multi-partner negotiation between the State, donors, the *Office* and farmers. The number of General Delegates for farmers has been raised from 2 to 3 with -de facto- a new profile (younger, literate and less dependant on *Office du Niger* staff).

<sup>44</sup> In fact, it was the second one but the first one (before 1994) was never implemented.



### 1.3 The Governance Decree

The governance decree (“*Décret de gérance*”) clarifies the land management issue in the *Office* and the responsibilities of the ON structure. Land belongs to the State, but cultivation rights are granted to farmers by the *Office du Niger*. During all of the *Office du Niger*’s long history, there was a constant promise to give occupancy permits to farmers as land titles after good normative exploitation under an “adaptation lease”. A first decree (no. 89-090/PG-RM) was adopted in 1989. It gave some land rights to farmers in two ways: permanent rights with permits and temporary rights under annual contracts. It was a first and important step towards clarifying the status of farmers in regards to the lands they cultivate. A new updated decree was adopted in 1996 (decree no. 96/88 P-RM dated 1 July 1996 and order in council n° 96-1695/MDRE dated 10 October 1996) which contributed to further enhance land tenure security for farmers. Between farmers and the *Office du Niger*, there is:

- ✍ The possibility to grant a “temporary agricultural land use permit” to those who are able to intensify in non-rehabilitated perimeters;
- ✍ The creation of a “housing lease contract” for farmers and non-agricultural families;
- ✍ The creation of representation committees<sup>45</sup> for land management, partitors management and the maintenance of the secondary irrigation network.

These texts do not give property rights to farmers but protect their interests if they respect the terms of contracts which are:

- ✍ Payment of water fees,
- ✍ Cleaning of the tertiary network, and
- ✍ real exploitation of irrigated fields.

### 1.4 The “Schéma directeur”: a Master-Plan in Preparation for Planning and Negotiation

A regional dynamic has now been engaged and there is a need for planners to anticipate trends in water consumption, network rehabilitation, canal maintenance, soil occupation, demographic increase, land pressure, and cattle accumulation and breeding. A master plan (“*Schéma directeur*”) for 2001-2020 is in preparation by an ON team with the help of a research team and consultants. It will give a broader view of the current evolutions and their outcomes in terms of the environment and the economy. Such a master plan is a tool for negotiation between the different actors involved in order to build a common view of the currents dynamics and their implications and of the decisions to be taken.

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<sup>45</sup> There was a tactical move during 1986 to 1996 period about these committees, their aim and designation to conquer *Office du Niger* staff resistance: the letter P for *Provisoire* (Provisional) became *Paysan* (Farmers) and then *Paritaire* (paritary), a significant and progressive institutional denomination.

Hypothesis	Annual Output* at Markala	Developable Surfaces (ha)	Remarks
Hypothesis 1: transplanting from 10 June to 31 July	Q5s	65,000	Low water level support from the Sélingué dam, 90 to 100-day rice varieties
	Q10s	54,000	
	Q support	227,000	
Hypothesis 2: transplanting from 10 June to 20 August	Q5s	131,000	Extended transplanting dates to reduce water needs at high points. Optimal transplanting start date respected.
	Q10s	109,000	
	Q support	228,000	

\* Q5s, Q10s: 5-year or 10-year outputs for dry years

Table no. 6: *Office du Niger* developable surface extension hypotheses. (*Schéma Directeur* 2000)

The master plan shows that the potential expansion will run up against the Markala dam's potential. We are far from the founders' mythical million hectares. The hypotheses under study in the master plan leave little room for maneuver to planners, given that close to 30,000 hectares remain to be rehabilitated.

## 2. Cooperation and Negotiation Between Farmers and the *Office du Niger*

The relationships between farmers and the *Office du Niger* concern mainly water management, maintenance and land tenure. We will describe the different kinds of farmers organizations and their role in these functions below.

### 2.1 Predominantly Local Level Farmer Organization

Village-based farmers organizations were created in 1984, on the model of the village associations (VAs) that had existed in the cotton area since 1974. They are informal organizations with no legal status and are supposed to be "pre-cooperatives". In 1984-85, 140 villages formed village associations and only 9 of them became "Tons villageois"<sup>46</sup> in 1986. Most of the farmers and *Office* staff did not want of the formal status of "ton", heavily controlled by state and party. In 1999, there were 146 village associations and 9 "Tons villageois". These village organizations were the interlocutor with the ON. They have gained more responsibilities for rice threshing and milling, credit management, land management, and selling. Village associations have informal and irregular operations but "tons" have status, obligatory internal rules (that must conform to the official guidelines for these rules) and boards of surveyors.

The failure of some VAs and the need for legal status for contracting with merchants have encouraged the creation of 221 economic interest groups and 101 women's economic interest groups. Most of them are quite formal and not effective.

<sup>46</sup> Law n° 88-62/AN-RM manages the cooperative movement in Mali and distinguishes between three categories: Unions, village associations and "Tons villageois" (traditional village associations; "ton" means traditional association in the local language).

Federative organizations are few and very new. The first farmer trade union (SEXAGON; *Syndicat des exploitants agricoles de l'Office du Niger*) was created in 1997. The second (SYNADEC; *Syndicat Agricole du Delta Central*) seems closer to the *Office* staff and followed in 1998. They play a protest role, demanding lower water fees and other costs. The government decided to create “chambers of agriculture” following the French model (Law no. 93-044, decree no. 93-295/P-RM) of “public professional establishment”. They are supposed to be a consultative body for different agriculture-related fields (prices, credit and commercialization; taxation and regulations; labor legislation and land law; training, and so on). Regional “chambers” have recently been created in Mopti and Ségou, and local “chambers” in Niono and Molodo. They do not seem to have concrete activities.

Farmer representation is concentrated at the local level and in some representation committees for work with the *Office* (see below).

## **2.2 Water Management**

Farmers are supposed to be autonomous in water management at the tertiary level of “arroseurs”. For each one, an elected “chef d'arroseur” is supposed to follow the irrigation schedule, decided by *Office* Staff at a higher level in consultation with the “partitor water management representation committee”<sup>47</sup>. In practice, “chefs d'arroseurs” are little heard and respected. They are not paid for this task<sup>48</sup>. The irrigation schedule is not respected because of the abundance of water. Catchments are opened at farmers’ request. (see executive summary and figures).

## **2.3 Fee Collection and Maintenance**

Farmers are responsible for tertiary level cleaning and maintenance. VAs have to organize collective works to clean the channels. Management of secondary canals is under the operational responsibility of the *Office du Niger* but the cost is paid by farmers through the water fee. The water fee is supposed to cover the maintenance costs for the secondary level (at least 50% of the fees must be spent on maintenance) and *Office* staff salaries. It depends on the quality of the network (three levels). To allow financial balance, it is progressively being raised, even if farmers (and sometimes ON staff) complain about this.

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<sup>47</sup> Comité Paritaire de Gestion de Partiteur (secondaire), (CPGP).

<sup>48</sup> Marlet S. et al., 2000.

<b>CFA Francs</b>	<b>1993/94*</b>	<b>1994/95*</b>	<b>1995/96*</b>	<b>1996/97**</b>	<b>1997/98***</b>
Class 1 Infrastructures (rehabilitated)	28,000	32,000	40,000	43,000	57,150
Class 1 “ <i>Hors-casier</i> ”	-	-	-	-	37,150
Class 2 Infrastructures (non-rehabilitated, little-damaged)	21,000	24,000	32,000	34,400	-
Class 3 Infrastructures (non-rehabilitated, highly-damaged)	14,000	16,000	24,000	25,800	-
Counter-Cycle	-	4,500	4,500	4,900	-

Table 7. Irrigation Fees per Crop and per Hectare

(\*the World Bank, 1996; \*\**Office du Niger*, 1999; \*\*\* Brondeau, 1999).

A fee management representation committee<sup>49</sup> was officially created for each zone in 1996 to ensure transparency and efficiency in the management of fees and works maintenance. Farmer delegates and ON staff discuss the collection of fees and the scheduling of maintenance work. The latter is now done under contract by private firms (local firms for small works such as cleaning).

At the beginning there was strong resistance within the *Office* against transparency about fees, and farmers were reluctant to commit to decisions that they could not understand but now dialogue seems quite good. The fee collection rate, which previously barely exceeded 80%, is now around 95%. Fees were later created for vegetable cropping and “*hors-casier*” fields. The recovery rate for irrigation fees was 96% on land officially within the scheme and 50% for “*hors-casier*” land and market gardening in 1998. Irrigation fees represented 66% of the ON 1997 budget.

The level of irrigation fees represents between 6 and 10% of net farm income in rehabilitated perimeters and 10 to 12% on “*hors-casier*” land<sup>50</sup>.

## 2.4 Land Management<sup>51</sup>

Land tenure insecurity has long been a tool for labor control by the ON, allowing it to expulse the settlers that did not achieve good results and give the fields to new farmers. It also allowed it to grant fields to *Office* staff, even though this was illegal. Since 1937, titles have regularly been promised to farmers but almost nothing has been done.

Land regularization took place in 1985 along with rehabilitation work (which needed to reallocate new fields on a new basis). A land registry was initiated in Retail and ARPON zones by the *Office du Niger* under the control of sworn surveyors. “*Non-residents*” (mostly *Office* staff and civil servants who have worked in the region) were the main beneficiaries of this regularization. Northern drought refugees, farmers from pluvial areas and some people

<sup>49</sup> Comité Paritaire de Gestion du Fonds d'Entretien du Réseau Secondaire (CPGFERS).

<sup>50</sup> IRAM, 1996.

<sup>51</sup> Most of this information come from Jamin, J.-Y., Doucet M.-J., 1994.

who had been expelled were excluded. On the request of the Retail project, a “letter of attribution” was given to farmers by the *Office du Niger* after rehabilitation. This was not a formal right since it has no legal status but it was a first step towards recognizing farmers’ land rights and it helped reduce arbitrary decisions by the staff. Eviction criteria were clarified, reducing the risk of arbitrary decisions. But the final sanction for those who can not repay their loans was still eviction and transfer or exchange was still forbidden. The Retail Project did a lot of work on this, giving legal information and translating land law into local languages, testing “provisional land management committees” at the village level, and struggling to find new rules.

The first legal steps towards ensuring land tenure security were made with the 1989 decree. Land management was placed in the village associations’ field of activity. Two land statuses were created: *permanent farmers* who have land tenure security if they follow the cultivation rules and repay their loans; and *temporary farmers* who have only an annual, renewable land use contract. Permanent farmers can obtain an agricultural land use permit (“*permis d’exploitation agricole*” – PEA) which can become a permanent agricultural land use permit after three years. Farmers can also obtain a *residential permit* for their houses (previously, farmers that were expelled from their fields would also lose their homes) but few farmers could obtain this title in practice. There was strong resistance within the *Office du Niger* administration as well as legal problems because the *Office du Niger* does not own the area (it belongs to the State). The process was stopped because of the lack of clarity in texts. The 1996 Décret de Gérance (governance decree) clarified the legal status of the *Office* and its responsibilities in land management. Land management representation committees have been created and take care of requests for and attribution of irrigated fields, reinstallation of expelled farmers, and withdrawal of cultivated lands or housing.

From a functional point of view, the land issue is now less acute and farmers have enough security to invest. But, given that there are no water rights, non-payment of water fees or of loans causes the loss of the field.

Leasing or selling land are more and more practised. For example, in Retail rehabilitated perimeters near Niono town, the leasing rate is 20% of the plots (leasing from 100 to 150 000 Fcfa/ha, selling from 500 to 750 000 Fcfa/ha), 10% to 15% in Ndebougou and Molodo (leasing in non rehabilitated perimeters: 100 000 Fcfa/ha is a maximum) and 5% in Macina and Kouroumari perimeters<sup>52</sup>. There is not yet a free land market<sup>53</sup> because of the low number of transactions per year.

Moreover, the legal situation is not fully clarified. Decentralization creates *rural communes* which have land affectation rights. Most of the *Office du Niger* zone is under control of the *Office* and there is a potential for a conflict of power between the two structures.

### **3. Private or Semi-Private Services**

#### **3.1 Credit**

Access to credit was a condition for intensification. ON and Arpon engaged in credit with the informal Village Development Fund (VDF). The National Bank for Agricultural Development

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<sup>52</sup> Personal communication from PCPS Niono staff, 2000.

<sup>53</sup> Rabès J. in Schéma Directeur, 2000.

(BNDA) also provided credit. Due to competition between these structures and ineffective rules, repayment rates were low even in the 1990s when technico-economic success was already there.

Reorganization of credit took place in 1995-96. Now, two decentralized finance schemes provide credit:

✍ **CRMD: Caisses Régionales Mutualistes du Delta**

They come from the Village Development Fund project initiated by Dutch Overseas Aid and were previously managed by the *Office du Niger*. In 1995, ON withdrew and the Fund was transformed into credit unions (“Caisses Mutuelles”) in 1996. 54 CRMD had one union per zone and a federation for all five zones. 14,208 individual members (9,000 men and 4,000 women) and 380 farmers organizations are involved in this system. Access to credit is possible if the borrower is a shareholder, if the other members stand surety for the borrower and if a security deposit (which also serves as the final payment) is paid.

✍ **Unions des CVECA (“Caisses Villageoises d'Epargne-Crédit Autogérées”)**

Supported by the French NGO CIDR since 1995, there are 49 village credit union branches (“Caisses Villageoises”) organized into three unions. Each village branch is managed autonomously and has with a directing committee. They study and decide on each credit application. There is no federation. Refinancing by BNDA is negotiated by the Union according to the following criteria: less than 2% of internal unpaid reimbursements, schedule respect and up-to-date reimbursements.

These two schemes seem to have very good results, with recovery rates of more than 90% for CRMD and more than 99% for CVECA. A “central risk management office” was created by CVECA and BNDA to recover old loans<sup>54</sup>. The credit situations is stabilizing but there is still a lack of medium-term equipment loans<sup>55</sup>.

### **3.2 Commercialization**

Trade is now completely free. Threshing and milling are done almost exclusively by VAs (and some private farmers for milling), allowing farmers to keep most of the added value. VAs negotiate contracts with private traders from the area or from the towns. After some difficulties in 1991-1992, and 1994, they have learned to negotiate contracts. The competitiveness of rice production shifted the balance of power in favor of farmers but commercialization is still risky because of unscrupulous traders.

### **3.3 Input, Seeds and Agricultural Machines**

Blacksmiths have progressively taken over from the ON-ARPON Project's central machine shop (AAMA) since 1982. The Dutch overseas aid program installed a professional and skilled network of 22 assembly shops united in the CAFON<sup>56</sup> Cooperative for supplies, credit, and training.

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<sup>54</sup> Personal communication, J-B. Spinat, IRAM, 2000.

<sup>55</sup> Schéma Directeur, 2000.

<sup>56</sup> CAFON: Coopérative Artisanale des Forgerons de l'*Office du Niger* (44 members in 1997).

The ON Niégué seed farm and the training center have been made autonomous through lease-management contracts. They still provide services but for a charge. The works center was fully privatized in 1997.

The State Seed Service is still represented in Molodo. Farmers buy their seeds directly. VAs have withdrawn from this activity. Some seed producers exist in the ON area.

Since ON withdrawal from this activity, VAs and economic interest groups are in charge of ordering fertilizers and pesticides from traders after price comparisons and authorization by the credit organizations (BNDA, FDV then CRMD, and CVECA). There are three import channels for these inputs from Senegal (Senchim), the Côte d'Ivoire (Hydrochem) and through UEMOA traders—providing an oligopoly-like local market structure. Distribution channels have been undergoing reorganization since the devaluation of the CFA franc in 1994 (CIRAD, 1995).

### **3.4 Advisors for Farmers**

The ON's mission is agricultural extension and a new structure to advise farmers organizations was created and is expanding—the *Faranfasi So.* service centers<sup>57</sup>. Independent from the ON and under farmers' control, they are autonomous centers, managed by their own adherents as VAs or economic interest groups that employ specialized advisors (mainly in economics, management and legal fields). This is a real innovation since it is the first time that farmers have autonomous access to advice. Legal advice was asked to help them in their contracts with merchants and in land issues. The service centers are not yet fully autonomous financially speaking.

### **3.5 Maintenance and Infrastructure Firms**

The works center has been privatized. New small firms are now in place for small maintenance. Foreign firms are still used for rehabilitation. All these works are done by private units, chosen through consultation and under supervision of the *ON (Cellule Travaux et Marchés* – works and market unit).

### **3.6 Field monitoring, Research and development**

URDOC (the *Unité de recherche développement/Observatoire du changement* – development research/change observatory unit) is now an autonomous service geared towards research and development. It is subsidized as part of the public service missions of the *Office*. It works on the dynamics of farming systems, and cultural techniques for rice and vegetables. Change observation with monitoring of the irrigated and cultivated surfaces, yields and added value, new methods of rice cropping are tested in farmers' real-life conditions and a program on rice diseases has been undertaken.

Agronomic research within IER (the *Institut d'Economie Rurale* – rural economy institute) has five important programs on farming systems, irrigated rice, fruits and vegetables, cattle breeding and forestry. Local problems are more and more taken into account in these programs. IER works under contract with the *Office du Niger*.

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<sup>57</sup> IRAM, 2000.

## **VI. CONCLUSIONS AND CHALLENGES**

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### **1. 15 to 20 Years' of Effort—an Impressive Mutation**

With its goal of irrigating 1 million hectares in an empty region, the *Office du Niger* was an archetypal Pharaonic irrigation project designed around semi-servile labor. For close to 50 years, political regimes came and went, assigning different economic goals to the *Office* but the vision of irrigation subjected to goals that were external to household economics remained intact with an authoritarian structure, an economic police force and disastrous technico-economic results that led to a structural deficit and considerable cost to public resources, society and the environment.

Today, only the *Office du Niger*'s name is the same. Tripled yields, increased surface area and population, expansion of double-cropping and market garden diversification; drastic restructuring of the *Office* from a octopus-like bureaucracy (with up to one employee for 6 settlers!) to a small-scale structure of approximately 360 people; financial balance and maintenance of secondary networks thanks to income from annual fees (the *Office* no longer depends upon public funds for public service missions and the maintenance of primary works); the status of public establishment under contract with the State; and negotiations with producers on a certain number of key points—the mutation is spectacular even if not everything has been taken care of.

This mutation did not take place spontaneously either. It took close to 20 years from the first upgrading and intensification projects at the end of the 1970s to the recent implementation of the reforms ratified by the 1994 law—20 years of continuous effort, of wrestling with the *Office* and of massive investment by a series of donors. The estimated cost to donors is approximately 2.2 billion French francs (close to 300 million US dollars). It is clear that the current results do not provide a return on this investment (not to mention the cost of prior phases!).

### **2. The Reasons for Success**

How can one explain the success of such a mutation? With hindsight, a certain number of factors seem to have been essential. There is of course the overall framework—launch intensification through a combination of changes in techniques and economic incentives; and improve the system's efficiency by a liberalization of the sector; and the restructuring of the *Office*, refocused on central functions with the suppression, transfer or privatization of the other functions.

The availability of a technical package, the creation of a favorable macro- and micro-economic framework and the implementation of institutional reforms (made necessary by the first two points) are also three of the keys to success according to the World Bank study (1996: 41) that also highlights other conditions which we shall discuss later. While these three keys are undoubtedly necessary conditions, they are not sufficient. They are the classic components of “State withdrawal” programs that, in the case of irrigated sectors in West Africa, are frequently combined with upgrading designed to come before the transfer of responsibility but their results in neighbor countries (Senegal, Niger) were far from



spectacular for economic (cost of pumping and motorization) and political (instability, credit sector crisis, weak farmers organizations, etc.) reasons.

## **2.1 The Technical Package, Economic Environment Improvement and Institutional Reform**

Giving farmers room to maneuver so that it is economically interesting for them to intensify and so that they can profit from doing so is a necessary prerequisite<sup>58</sup>. Here one should remember the economic precariousness of the situation in which farmers—obliged to deliver all their production to the *Office* and watched over by the economic police—were found before 1984.

A dynamic economic situation was created. It is in part the result of the maneuvering room given to farmers by allowing them to profit from the fruits of their efforts—suppression of the economic police, higher prices, access to credit, and relatively secure land tenure. It is also partially the result of external factors—the ‘*hors-casier*’ diversification (in rice and market gardening) that initially grew from strategies used to resist the *Office*. It profited considerably from the evolution in the economic context. Using animal-drawn cultivation within gravity perimeters, the *Office*’s farmers benefited from devaluation which boosted both rice-cropping and other productions (animal farming, market gardening)<sup>59</sup>. Land-locked Mali had a relative amount of natural protection that allowed the *Office*’s rice to compete with imported rice and even enter a few markets in the sub-region. One can measure the full difference with situations such as that in Senegal where costly rice is produced with pumping irrigation and highly motorized production patterns and where the country does not have natural protection.

In this context, the technical intensification package (transplanting and fertilizers over small surface areas with good control of water thanks to upgrading) was able to be implemented successfully, starting in the second half of the 1980s and then disseminated. Note, however, that with hindsight the casualties were not always those expected at the start. Thus, for intensification, the accent was placed on physical upgrading as a prerequisite while transplanting and improved yields (lower than in upgraded zones) spontaneously spread to non-upgraded lands within the scheme’s zone. In addition, the dissemination of threshers allowed VAs to provide themselves with functional and economic reality even if this function was afterwards more or less well managed—which goes to show the decisive role of the micro-economic context (the end of the economic police, the first producers’ price rise, access to credit).

The first (limited) institutional reforms were one of the conditions for this first economic take-off, which in turn showed the need to go further in the reform, towards the very structure of the *Office*.

## **2.2 Progressiveness in the Intervention**

From the technical upgrading projects within the *Office* to the explicit definition of the institutional reform project and its total implementation, the belief that the heart of the

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<sup>58</sup> Cf. on the contrary those cases where “State withdrawal” takes place a sluggish economic environment in which farmers have little or no interest in intensifying and in which the “transfer of responsibility” is essentially the same as a transfer of costs.

<sup>59</sup> Here one can see the full contrast with Senegal that did not have the natural protection of being land-locked, and whose rice sector, irrigated by pumping and heavily mechanized, was hit hard by the shock of devaluation.

problem was within the *Office*'s very structure and in the conditions granted to farmers gradually imposed itself on all (to different degrees and through successive wrestling matches). Some stakeholders undoubtedly believed this very early on even if, in the texts, this only became visible during the first upgrading programs (ARPON and Retail) at the end of the 1980s. The institutional reforms were not only imposed *a priori*, as donors' diktat. While strongly promoted, they also progressively revealed themselves to be indispensable in relation to the technico-economic changes that had already started to prove themselves. They would undoubtedly not have had the same impact if the technical and economic change had not started to take place and had not had the support of farmers as well as of "reformers" within the *Office*.

They were implemented progressively based on the challenges of technico-economic performances (create an economic environment that provides incentives then work on the *Office*'s structure itself). The *Office* itself was not directly questioned—at least not officially—in the first projects and it was only during the upgrading projects that restructuring was openly placed on the agenda.

### **2.3 A Reform in Parallel with Macro-Economic Reforms with Clear Political Will**

The drought crisis and the structural adjustment schemes combined together to make obvious the need for irrigation and the need to reduce public deficits, obliging the State to tackle the problem posed by the *Office* from two angles—jump-start productivity and reduce the structural deficit. The economic liberalization and the restructuring of cereal markets contributed to returning added value to farmers. Devaluation, an independent event, entered the picture after things had started moving and was able to provide all its benefits.

The political context was also decisive—a weakening military dictatorship that had already improved the situation somewhat in relation to the preceding collectivist period; consensus on the unacceptable conditions provided for settlers; a climatic and economic crisis that nevertheless placed the emphasis on irrigation (and thus on the *Office*) while pushing for economic liberalization. The first stages were half-accepted, half-endured by the powers in place and it was thanks to the democratic transition, in 1991-93, that public authorities were convinced in favor of the reform, placing the *Office* restructuring committee directly under the authority of the Primature (the office of the Prime Minister) once they had been convinced, in parallel with the reform of the MDRE<sup>60</sup>.

### **2.4 Lasting Coordination Among Donors**

A pool of donors (the World Bank, Dutch Overseas Aid, French Overseas Aid) rapidly became the core and remained so for the duration. They forged a common vision of at least the main principles even if the debates on technical choices<sup>61</sup>, on the attitude vis-à-vis the *Office*, and on the size and rhythms of reforms were numerous. This coordination made it possible to take common stands, to have weight both in the field and in policy-oriented issues (price for producers, land tenure status, performance contracts, etc.). This coordination around a common vision of the path to be taken made it possible to negotiate the successive evolutions in a pragmatic manner.

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<sup>60</sup> MDRE: Ministère du Développement Rural et de l'Environnement, puis de l'Eau. (Ministry of Rural Development and the Environment, then later Water).

<sup>61</sup> Cf. the debate on upgrading techniques.

## **2.5 Semi-Autonomous Field Activities and Policy Influencing Actions: a Complementary Pair**

Combining field actions in institutional support with the reforms had multiple advantages:

- ✍ The initial emphasis placed on upgrading provided non-negligible means and, focusing on the *Office*'s central mission, did not seem to be a frontal attack.
- ✍ The studies and monitoring implied by these activities made it possible to build progressively a shared vision among stakeholders<sup>62</sup>.
- ✍ The existence of staff funded by donors and partially independent of the *Office* made fuller feed-back of information on the realities in the field and on local reactions, in particular by passing on the opinions of farmers who had hardly any other channel to express themselves.
- ✍ Long-term work with farmers and *Office* agents made it possible to understand the different positions taken within the *Office* better and to give greater weight to "reformers" from within and even to introduce then necessary "ruptures".

But the field actions would not have had the same weight if they had not been accompanied, and followed, by actions that effected the (economic, institutional and legal) environment and that were all the more pertinent because they were based on in-depth knowledge of the situation in the field.

## **2.6 Office Resistance**

It may seem paradoxical to cite the *Office*'s resistance to change as a factor for progress—this resistance was very strong and evolutions were imposed after much struggle in a permanent wrestling match—but it was precisely this resistance that forced the adoption of a progressive approach, kept things from moving too fast, legitimized the changes one by one and consolidated them. The restructuring process spread out over 15 years instead of the 3 years provided for in donors' initial plans. This also made it possible for the (often difficult for those who implemented them) efforts in training, institutional redefinition and support to be made. Indeed, wherever too quickly administered radical reforms telescope together, they often result either in few progress or in total decay (SEMRY in Cameroon, the ex-SOMALAC zone in Madagascar).

## **2.7 A Partially Contingent Process**

With hindsight, the history of the *Office* reveals a virtuous series of technical changes, micro- and macro-economic environmental reforms and institutional reforms that were in part not tied to the *Office* and support programs themselves but that came "at the right time". Some factors were due to the context or principles of action and can be reproduced (political will and coordination among donors; and progressive action, for example). Other factors were due to a favorable set of circumstances, a virtuous chain of factors that *a priori* could not be totally predicted (devaluation took place when sectors were already partially liberalized and the economic boom had already begun)<sup>63</sup>.

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<sup>62</sup> Cf. URDOC's role.

<sup>63</sup> Cf. *a contrario* the disastrous impact in Senegal of the conjunction of complete sector liberalization and devaluation.

### **3. Tomorrow's Challenges**

The recent turn of the century saw the completion of the reforms codified in the 1994 law. For all this, not all is finished and many challenges remain:

#### **3.1 Continued Efforts are Needed**

Upgrading the not-yet renovated zones, intensive farmer and agent training—the emphasis on the upgraded zones should not eclipse the fact that the totality of the *Office* is far from having benefited from these activities that were concentrated in a few areas (Niono, N'débougou, Macina). The cost of upgrading has fallen significantly thanks to the stabilization of technical models and the use of local businesses. Part of the cost of the support that was needed to define the new rules can thus be economized but, nevertheless, the need for investment remains great.

But now, the *Office du Niger* with its new status and connexions with State is more dependant from political evolution and conflicts as it happened in September 2000 when General Director was dismissed. Continued efforts need also a stabilized management.

#### **3.2 The Weaknesses of Peasants Organizations**

All these evolutions were made with few peasant representation. Peasant organizations are still mainly at the village level: AV or GIE. Federative organizations, as trade-unions, credit unions, advise organization (*faranfasi so*) are only a few years old.

The parity committees are quite new, not even 10 years, and peasants needed time to be able to play their role inside them (as well as the Office staff needed time to accept to share the power with peasants). Farmers representatives are now elected to discuss the performance contracts.

At these two levels, new elections have been done recently, and new representatives are now in charge of defending the interests of the peasants. They are younger, better trained, and are more able to read the papers in French and discuss with the Office staff. If they are properly trained, and if these committees actually works, they can play a more active role in negotiating with the Office.

The trade-union are very young. The first one, SEXAGON, was created against the Office. The demonstrations that it organized proved that it has an effective legitimacy amongst peasants. The second one, SYNADEC, appears more as a creation of the Office, trying to divide the peasants. SEXAGON is demanding to be part of the negotiation of the performance contract, and of ON management. But it did not succeed yet.

At the local levels, peasant organizations are still quite weak. They play a significant economic function : 60 to 70 % of threshing, and a big part of husking is made by AV ; the quasi-totality of the credit (2 billions FCFA for fertilizers) comes from the new credit schemes through the AV, which choose and give caution to the borrowers, stock and distribute the fertilizers, recover the credit. They also control a significant part of the trade (more than 20 % in some villages), play a role in land management, and in conflict resolution, and so on. But most of them have financial and organizational problems. A lot are still heavily indebted. Some have made huge progress, but a part of the new GIE were created only to gain access to credit.

At these different levels, peasant organizations need support and training.

### **3.3 Land Tenure Status and Ties with Decentralization**

Farmers' land tenure status within developed parcels has improved a great deal but is not completely stable. The coupling of access to water and land rights poses a problem once the confiscation of the parcel is the only response to deficient repayment. This contradicts the affirmation of more secure rights to land through the "*Permis d'Exploitation Agricole*" (Agricultural Land Use Permit), 1,388 of which have been granted (92% in 1997 and 1998), denoting an acceleration in the tenure process for irrigators. Strong social differentiation is underway, as can be seen in the volume of land rentals and sub-lets (up to 20% of the plots in villages near Niono) even though this practice is officially forbidden.

"*Hors-casier*" parcels, close to 10,000 ha which could be integrated in the *Office du Niger*'s network<sup>64</sup>, are in a more complex situation, with more uncertain status and a race for land. The expansion of animal farming also poses problems for the cohabitation of activities and thus of regulations on the status of the area and access rights<sup>65</sup>. One of the roles of the master plan is to build an overall vision of the region's future.

The implementation of administrative decentralization makes the landscape more complex in so much as the communes, while theoretically doted with a "communal domain" and responsible for land and natural resource management, see most of their territory under direct control of the *Office*.

### **3.4 Which Modalities and What Land Tenure Status for the Future Extension of Improvements?**

The economic dynamism and the profitability of irrigation now makes it possible to envisage the extension of irrigated surfaces. Such extension shall not be accomplished according to former modalities—a total State subsidy and infrastructures freely available to farmers. Financial participation mechanisms for farmers have been implemented for the extension of the Retail branch. This raises the problem of costs and long-term loans and raises the questions of the type of farm able to meet such a cost and the land tenure status to be granted to these new farmers. The choice of financial modalities shall influence the type of farm apt to profit from them and thus the sociologic profile of producers (big peasants or outside "investors" ?). Nevertheless, heightened social differentiation seems relatively inevitable even though a large number of agricultural workers are waiting for access to land. But until now, big farmers are quite few, and do not have the most productive farms.

### **3.5 More Rigorous Management of Water and the Possible Risks of Land Degradation**

The abundance of water has until now made possible heavy consumption and rather lax water management. The absence or weakness of the drainage networks has led to a spectacular rise in the level of the water table. Some specialists feared rapid degradation of the soil, but it seems that the risks are not so high<sup>66</sup>.

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<sup>64</sup> *Schéma Directeur*, 2000. To be released.

<sup>65</sup> Brondeau, 1999.

<sup>66</sup> This question is part of the research program of the Pôle Systèmes Irrigués (Irrigated Systems Cluster) coordinated by CORAF.

In any case, the extension of developments will increase the demand for water, which leads one to reconsider the management of the totality of the Niger basin and a possible change in vocation for the upstream Sélingué dam. The potential of the Markala dam is limited to 228,000 ha at the very most with the most likely size approximately 60 to 100 thousand ha in the hypothesis of rigorous management with early-maturing varieties of rice and early transplanting dates. The expansion of surfaces will thus necessarily lead to making water management more rigorous at the secondary level of distributaries, which is made more complex by the growing diversification of speculations and cropping systems.



## **Annexe 1**

### **Main Legal Texts and Contracts Related to Office du Niger**

#### **Before 1982: Managing the Fruits of the Past**

Présidence du gouvernement, secrétariat général du gouvernement, décret n° 108/PG-RM du 2 septembre 1971 portant approbation des statuts de l'Office du Niger (*legal status*).

Présidence du gouvernement, secrétariat général du gouvernement, décret n° 60/PG-RM du 21 mai 1973 portant organisation de la gérance des terres irriguées de la vallée du Niger (*land management*).

Office du Niger, direction générale. Relations exploitants-Office du Niger, mars 1981. 16 p. (*relations between farmers and ON*).

Ordonnance de la présidence de la République, secrétariat général du gouvernement, n° 81-3/1-RM du 28 avril 1981 érigeant l'Office du Niger en Epic (Etablissement public à caractère industriel et commercial) (*legal status as economic and commercial public structure*).

#### **1984-86: New Laws on Land and Farmers Organizations**

Loi de 1984 sur les associations villageoises et les tons villageois. (*village associations*).

Loi n° 86-091/AM-RM du 1<sup>er</sup> août 1986 portant code domanial et foncier (*land law*).

#### **1989-90: The Struggle**

Journal officiel de la république du Mali du 2 avril 1990, spécial n°1, spécial Office du Niger, secrétariat général du gouvernement :

✍ Loi n° 89-06 (08?)/AM-PM du 18 janvier 1989 érigeant l'Office du Niger en Epic (Etablissement public à caractère industriel et commercial) abrogeant l'ordonnance n° 81-3/1-RM du 28 avril 1981 (*new status as EPIC*).

✍ Décret n° 89-083/P-RM du 29 mars 1990 fixant l'organisation et les modalités de fonctionnement de l'Office du Niger (*organization and management of the ON*).

✍ Décret n° 89-090/PG-RM du 29 mars 1989 portant organisation de la gérance des terres affectées à l'Office du Niger (contrat annuel d'exploitation, cahier des charges constituant les clauses et les conditions d'application du permis d'exploitation agricole sur les terres irriguées de l'Office du Niger; permis d'exploitation agricole; bail emphytéotique; contrat général) (*land management at the Office*).

Premier contrat-plan de l'Office du Niger. Non accompli. (*first performance contract ; not enacted*).

Ministère de l'Agriculture, Office du Niger. Procédures de gestion du terroir villageois à l'Office du Niger, délégation de pouvoir de gérance aux organisations paysannes, novembre



1990. 28 p. (approuvé par le ministère de l'Agriculture le 14 janvier 1991) (*land management transfered at the village level*).

### **1993-1996: The Achievement...**

Lettre de politique de développement de la filière rizicole nationale n° 00012/MDRE/CAB/SP/C du 15 janvier 1993 (*policy for rice production*).

Loi n° 94-004 du 9 mars 1994 portant création de l'Epic (Etablissement public à caractère industriel et commercial), Office du Niger (*law for the new ON*).

Décret n° 94-142 P/RM du 31 mars 1994 portant création des organes de gestion de l'Office du Niger, de leurs attributions et responsabilités. (*organization and management of the ON*).

Premier contrat-plan Etat-Office du Niger-Paysans 1996-1998 du 27 décembre 1995 (*first performance contract*).

Décret de gérance des terres affectées à l'Office du Niger n° 96/88 (188 ou 118 ?) du 1<sup>er</sup> juillet 1996 sur la sécurisation foncière et les responsabilités de gestion du réseau hydraulique (*decree on land securization and management of hydraulic system*).

Arrêté MDRE (ministère du Développement rural et de l'environnement) n° 96/1695 du 30 octobre 1996 sur la sécurisation foncière et les responsabilités de gestion du réseau hydraulique.

Office du Niger, direction générale, ACG. Proposition de taux de redevance pour la campagne 1996-97.

Deuxième contrat-plan Etat-Office du Niger-Paysans 1999-2001 (*2<sup>nd</sup> performance contract*).

### **...within a Changing Institutional Context**

#### **Décentralisation et création des collectivités locales (*administrative decentralization*)**

- ✍ Loi n° 93-008 du 11 février 1995, déterminant les conditions de la libre administration des collectivités territoriales.
- ✍ Loi n° 95-034 du 12 avril 1995 portant code des collectivités territoriales en république du Mali.
- ✍ Décret n° 95-210 /P-RM du 30 mai 1995 déterminant les conditions de nomination et les attributions des représentants de l'État au niveau des collectivités territoriales.
- ✍ Loi n° 96-050 portant principes de constitution et de gestion du domaine des collectivités territoriales.
- ✍ Loi n° 96-051 déterminant les ressources fiscales des communes.

#### **Restructuration MDRE ministère du Développement rural et de l'eau (1993-1998) (*restructuration of the Ministry of Agriculture*):**

Recueil des textes législatifs et réglementaires portant sur la réorganisation du MDRE au Mali, Camopa (Cellule d'appui à la mise en œuvre du plan d'action), Bamako, tome I, 1998.

4 lois et 1 décret sur le fonctionnement des cabinets et secrétariats généraux du ministère; le contrôle des services publics, la création et le fonctionnement des différentes directions nationales du MDRE:

- ✍ direction nationale de l'appui au monde rural;
- ✍ direction nationale de l'aménagement et de l'équipement rural;
- ✍ direction nationale de la réglementation et du contrôle.

en annexes: textes sur la décentralisation.



## **Annexe 2**

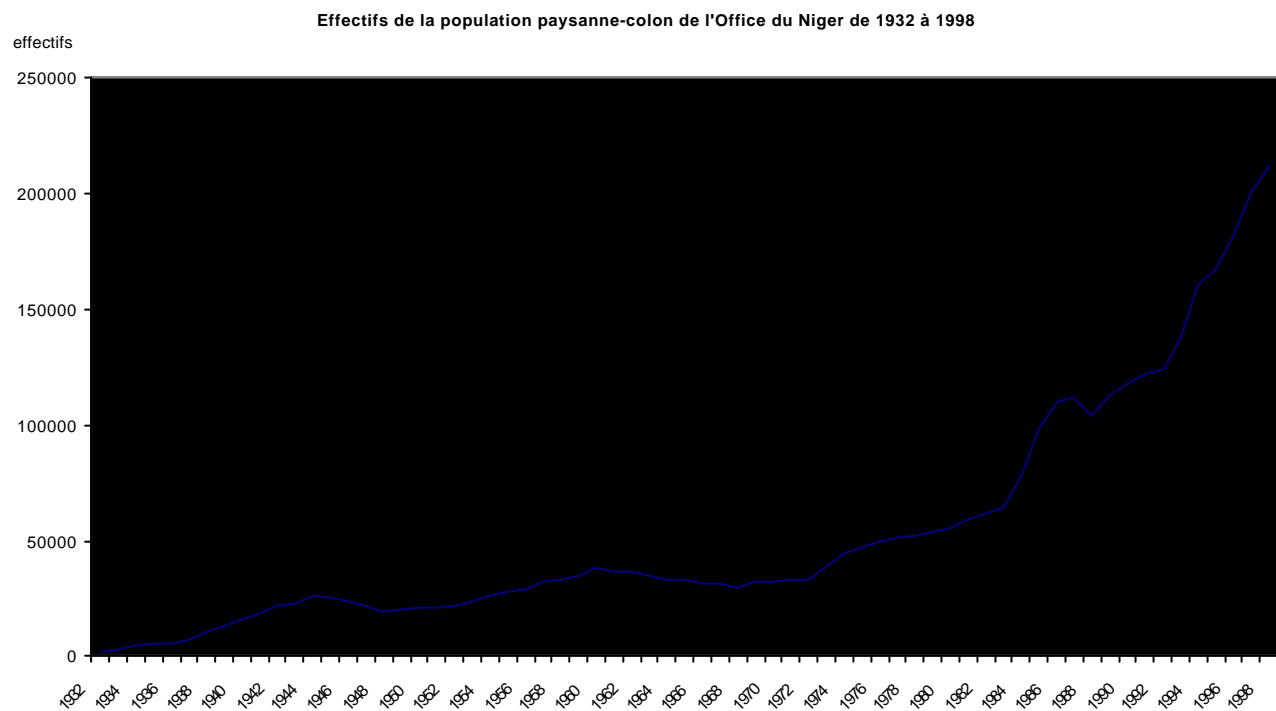
### **The History of Office du Niger (Mali): Different Steps**

1919	Début des études topographiques et agronomiques dans la vallée du Niger.
1932	Création de l'Office du Niger, lancement des grands travaux, réquisition des indigènes.
1937	Installation volontaire ou forcée des premiers colons dans le secteur Sahel, culture du coton obligatoire, premières promesses du permis d'occuper (foncier).
1946-48	Abolition du travail forcé et de la coercition, premiers retours de colons Mossi, mise en service du barrage de Markala, augmentation des surfaces irriguées.
1948-60	Expérience de la régie mécanisée à Molodo.
1953-55	Installation de nouveaux villages.
1960-62	Indépendance du Mali, transfert de l'ON à l'État malien et nationalisation des terres, fin des vagues perspectives de propriété paysanne, de nombreux colons Mossi rentrent au pays (Haute-Volta).
1962-68	Expérience socialiste: champs collectif « du Parti », exploitation en régie directe mécanisée, éviction de « koulaks », d'endettés et de non-résidents, instauration de la police économique, lancement de la canne à sucre en régie.
1970	Abandon total du coton.
1972-74	Années très sèches: abandon de cultures pluviales, grosses pertes pour l'élevage, mais facilités d'achat d'animaux (faibles prix) et pâturages des rizières en saison sèche.
1975-76	Troisième vague de retour de colons Mossi en Haute-Volta.
1975-80	Développement des cultures de riz <i>hors-casiers</i> avec la dégradation du réseau.
1978	Premières études pour la réhabilitation des casiers.
1978-81	Attributions sur la base de 4 ha par charrue.
1980	Premier test de réaménagement du réseau.
1982	Début des réaménagements ARPON Niono.
1982-87	Longue série d'années sèches; abandon de la plupart des cultures pluviales, grosses pertes sur l'élevage. Afflux de réfugiés du nord autour des casiers.
1983	Construction de la route goudronnée Markala-Niono. Développement du maraîchage.
1984	Suppression de la police économique. Création des premières AV. Orientation affirmée vers l'intensification et le réaménagement.

- 1984-85      Suppression du statut des « divers », qui s'inscrivent comme colons (non résidents); retour du Franc malien dans la zone Fcfa.
- 1985          Nombreux achats de bœufs sur crédit du Fonds d'intrants agricoles (ARPON). Expérience de contre-saison.
- 1985-86      Début du réaménagement dans le secteur du Sahel (projet Retail). Libéralisation de la commercialisation du riz. Epizooties entraînant la mort de nombreux bœufs.
- 1986          Culture en zone test-réaménagée sur 200 ha à Niono-km 26.
- 1987          Riz intensifié (repiquage et contre-saison) sur les 1 200 ha réaménagés. Rizières attribuées sur la base modulable de 1 ha/travailleur-homme. Attribution officielle de jardins. Suppression des *hors-casiers* des villages concernés.
- 1988          Equipement ou rééquipement en bœufs possible sur crédits BNDA pour la zone réaménagée. Bonne pluviométrie (abondance de mil pluvial).
- 1989-90      Réaménagement sur Retail 2: 1400 ha. Suppression de très vastes hors-casiers, pour des villages ON et hors ON.
- 1991-93      Renversement du régime du général Moussa Traoré ; gouvernement de transition puis Troisième République.
- 1991-92      Permis d'exploitation agricole délivré à 38 colons (longue durée de jouissance des terres, transmission aux enfants). Baisse des redevances à la demande des paysans. Lancement massif des batteuses et décortiqueuses villageoises.
- 1994          Dévaluation FCfa; réforme du statut de l'Office du Niger; début de la réforme du MDRE.
- 1995          Signature du premier contrat-plan Etat-Office du Niger-Paysans.
- 1996          Démarrage des projets crédit décentralisé CVECA, CRMD et centres de prestations de services PCPS; lancement des comités paritaires (gestion des terres, gestion du fonds d'entretien du réseau secondaire, gestion des partiteurs).
- 1997-98      Forte accélération des octrois du permis d'exploitation agricole (1 276 attributions).
- 1999          Premières élections des conseils de communes rurales.
- 2000          Les efforts de réhabilitations continuent; Les extensions et la future gestion de l'eau sont raisonnées dans le cadre d'un schéma directeur en préparation; Préparation de la réforme domaniale et foncière et du code de l'Eau.

### **Annexe 3**

## **Demographic Evolution of the Office du Niger Area**



(source : Sourisseau, 2000)



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Le monde change, les façons de travailler en coopération aussi. Au Sud comme au Nord, effervescence associative, libéralisation économique et décentralisations administratives renouvellent le paysage institutionnel. Les revendications légitimes des citoyens à plus de prises sur leurs conditions de vie amènent à inventer des articulations originales entre démocratie participative et démocratie électorale. Pour rompre les logiques d'exclusion, pour assurer un accès équitable aux services et aux opportunités économiques, de nouvelles articulations entre État, marché et société civile sont à créer, et à consolider institutionnellement et juridiquement.

La légitimité d'actions de solidarité internationale est d'y contribuer, aux côtés des acteurs locaux engagés dans de telles démarches. Mais le système d'aide favorise trop souvent les modes, les impositions de problématiques, les solutions toutes faites. Coopérer aujourd'hui implique de travailler en phase avec les dynamiques sociales, politiques et institutionnelles locales, avec une exigence accrue en termes de qualité et d'efficacité à long terme.

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**n° 25.** « Financement du développement : la mécanique des fonds. Ambitions et pratiques des 'fonds de développement'. Tome I. Synthèse » (Philippe Lavigne Delville, Nathalie Gauthier, Gret/Direction scientifique, août 2001, 67 pages).

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