



# Burkina Faso



Unity-Progress-Justice

# National Rice Development Strategy



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## ACRONYMS AND ABBREVIATIONS

2iE	International Institute for Water and Environmental Engineering
ABN	Niger Basin Authority
ABV	Volta Basin Authority
ADRAO	Africa Rice Center (AfricaRice)
AN	National Assembly
BFA	Developed lowlands
BNA	Non-developed lowlands
CAADP	Comprehensive Africa Agriculture Development Programme
CAP	Matourkou Agricultural College
CEDEAO	Economic Community of West African States (ECOWAS)
CIR-B	Burkina Interprofessional Rice Committee
CSLP	Strategic Framework to Combat Poverty
DGPER	Directorate General for the Promotion of the Rural Economy Direction
DGPV	Directorate General for Plant Production
ECOWAP	Agricultural Policy of the Economic Community of West African States
ECOWAS	Economic Community of West African States
EPA	Permanent Agricultural Survey
GIPD	Integrated Production and Pest Management
GPAB	Irrigation scheme downstream of a dam
GPPP	Pump-irrigated Scheme
IDR	Institute of Rural Development
IMF	Institute of Micro-Finance
INERA	Institute of Environmental and Agricultural Research
IRSAT	Applied Science and Technology Research Institute
MAH	Ministry of Agriculture, Water and Fisheries
NERICA	New Rice for Africa
NGO	Non-governmental organisation
NRDS	National Rice Development Strategy
ONRIZ	National Rice Observatory
OP	Farmer organization
OSIRIZ	Observatory of International Rice Statistics
PAU	West African Economic and Monetary Union (WAEMU) Agricultural Policy
PAFASP	Support Programme for agro-sylvopastoral systems
PAFR	Rice Sector Action Plan
PRP	Rainfed Rice Project
PS	Strictly rainfed
PSSA	Special Programme for Food Security
PTF	Technical and financial partners
SNDDAI	National Strategy for the Development of Sustainable Irrigated Agriculture
SOFIGIB	Burkina Interbank Financial Guarantee Company
SONAGESS	National Security Reserve Management Company
SOPROFA	Agricultural Systems Promotion Company
WAEMU	West African Economic and Monetary Union

## EXECUTIVE SUMMARY

World demand for rice continues to rise, driven by population growth, particularly in Asia, by urban expansion and changing African food habits. At the same time the world availability of rice has fallen because the area of land planted to rice has been reduced in favour of other crops (biofuel, wood...) and due to drought and floods induced by climate change.

Despite huge production potential, African imports account for a third of the total amount of rice traded on the world market. However, African countries have put considerable effort into intensifying rice production in response to growing population demand.

While rice consumption in Burkina Faso is constantly increasing, national rice production covers no more than 47% of population needs. Paradoxically, Burkina Faso has strong unexploited potential for rice growing: less than 10% of the 500,000 ha of lowland that could be developed has been brought into production, while less than 5% of the 233,500 ha of land suitable for irrigation has been exploited.

The contribution of home-grown rice to economic growth remains very modest. Added value from the local rice sector is estimated at 8 billion CFA francs (representing 0.31% of GDP), of which about 6 billion CFA francs is attributable to production.

Increasing national rice production is a strategic issue for the government as shown by several recent specific measures and the importance placed on rice-growing projects and programmes. A number of national policy documents and institutions lend support to the rice sector with obtaining rice self-sufficiency in mind.

Three distinct types of rice production (irrigated, lowland and rainfed) are practised in Burkina Faso; underpinned by the direct involvement of growers, processors and traders and the indirect involvement of input and machinery suppliers, lending institutions, research and advisory bodies, and technical and financial partners.

Among the major challenges that must be overcome by the Burkinabe rice sector are the growth and intensification of national rice production, strengthening the sector's contribution to poverty reduction and the balance of payments deficit, security of tenure for farm holdings, effective management of cross-border issues (water, flow of inputs), development of action-research and extension, training of stakeholders and advisers.

The National Rice Development Strategy (NRDS) fits perfectly with the Rural Development Strategy and envisages making rice growing one of the key levers to achieving food security in Burkina Faso. Its overall objective is to contribute to a sustainable increase in both quantity and quality of national rice production to meet consumers' needs and requirements. It incorporates four strategic directions (growth in developed land area, sustainable intensification of rice production, enhanced economic benefit from rice production, and research – outreach, expert advice, capacity building of stakeholders) with accompanying action plans. The NRDS is being drawn up and put in place in two five-year phases—from 2008–2015 and from 2016–2018. The State, the technical and financial partners, the local communes and the benefiting populations have underwritten the overall cost of 258.5 billion CFA francs. Three bodies (the pilot committee of the PNSR, the interdepartmental technical committee and national coordination unit) will safeguard the NRDS governance.

## INTRODUCTION

Burkina Faso is a landlocked continental country of about 274,200 km<sup>2</sup> in a loop of the River Niger. Its natural hydrographic system (large and small rivers, ponds) mainly comprises intermittent watercourses. As a Sahelian country, Burkina Faso has a sub-tropical climate, typical of the transition zone between the Sahel in the north (average annual rainfall of 350 mm) and the Sudanian zone in the south (average annual rainfall 1,000–1,200 mm). It is characterized by a rainy season lasting for four to five months (May–September) and coinciding with the main agro-pastoral production period, and a dry season of seven to eight months from October to April. Irregular rainfall is a major constraint on agricultural and livestock production and is a huge influence on food availability and the nutritional health of the population.

More than 85% of the working population is involved in agriculture, which contributes nearly 33% of gross domestic product as well as accounting for more than 85% of export earnings. Despite this heavyweight contribution, revenue levels in the sector remain low. More than 10% of the national budget has been devoted to agriculture every year since 1990.

Cereals are the main food resource for the population, with rice being the fourth most cultivated cereal in terms of both land area and production. Rising food prices and the shortages seen in the world market have compelled developing countries to place greater store on national production to guarantee food and nutritional security and reduce their economies' vulnerability to exogenous shocks. Since 2004 the Burkinabe government's rural development strategy has been aligned to the strategic framework of its fight against poverty, which has full political backing for its main aim of increasing, diversifying and intensifying crop, pastoral, forest, wildlife and fisheries production.

Despite strong potential, particularly through land improvement, national rice production remains poor, covering just 47%<sup>1</sup> of the country's rice needs, the remainder provided by imports at the expense of major currency outflows. Therefore, every development initiative aiming to grow and intensify farming production under the NRDS is fully in line with the national objectives of the fight to overcome poverty. The necessity for a reference framework for public intervention in rice growing in Burkina Faso effectively led to the development of the NRDS.

The NRDS overall objective is to contribute to a sustainable increase in both quantity and quality of national rice production with the aim of meeting consumers' needs and requirements. With this in mind, four strategic directions were identified:

Direction 1: growth in managed land area,

Direction 2: sustainable intensification of rice production,

Direction 3: enhanced economic benefit from rice production, and

Direction 4: research – outreach, expert advice, capacity building of stakeholders.

This strategy document pivots on six major parts:

- The general state of rice growing
- An inventory of the rice sector
- Challenges and opportunities
- National Rice Development Strategy
- Financing of the National Rice Development Strategy
- Measures associated with the National Rice Development Strategy

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<sup>1</sup> DGPER, 2011

## I. GENERAL STATE OF RICE GROWING

As a staple food in many countries, rice assumes a dual economic and social role in terms of market development, food security and the fight against poverty. Rice is the third most-produced cereal worldwide after wheat and maize, but there is limited international trade in rice because only 7% of production is sold on the world market. It is estimated (OSIRIZ, 2010) that world rice production in 2009 (678 million tonnes) was 1.4% down on the corresponding figure for 2008 (687 million tonnes).

World stocks at the end of 2009 were up by 5% from 110.8 million tonnes to 124 million tonnes thanks to a surge in production during 2008. These reserves were equivalent to 28% of world needs. Stocks of around 121 million tonnes were expected in 2010.

The rice crisis could persist in the long term because there is currently:

- a steady reduction in world supply due to a smaller rice area in favour of other crops (biofuels, timber etc.);
- population growth and a rise in the standard of living in some Asian countries (India and China) driving extra demand in these countries and reducing export capacity;
- on top of these, climatic change leading to lower yield and lower production in exporting countries risks intensifying the world rice deficit.

Despite huge production potential, imports into Africa account for a third of all rice traded on the world market. However, African countries have made efforts to intensify rice growing in response to increasing population demand. From 2001–2005 annual rice consumption in West Africa grew significantly (an average 6.55% annually), resulting in this sub-region, which is the continent's main rice producer and its main rice consumer, importing nearly 42% of its consumption requirements via the world market (ADRAO, 2007).

As in other West African countries, Burkina Faso's rice consumption is constantly rising while national production barely covers 47% of the population's needs. Rice imports have practically tripled in just 10 years, going from 137,185 tonnes in 1985 to 305,180 tonnes in 2006, respectively worth 26,800 billion francs CFA and more than 37.8 billion FCFA. Paradoxically, Burkina Faso still has major unexploited rice production potential: around 500,000 ha of suitable lowlands of which less than 10% is being exploited and more than 233,500 ha of land suitable for irrigation of which less than 5% is currently developed. However, the rice sector has, with State help, leapt forward in production by 200% from 2007–2008 to 2008–2009 with record rice production of 195,102 tonnes. Paddy production during the 2009/2010 campaign (213,584 tonnes) is up 9% when compared to the 2008/2009 campaign<sup>2</sup>.

The sector's contribution to economic growth remains very modest. The added value of the local rice chain is estimated at 8 billion FCFA (0.31% of GDP) of which about 6 billion FCFA comes directly from production (PAFASP, 2007). As for the producers' income earned from rice production, this remains modest in relation to the effort put in. The number of people depending on rice producers is estimated to be 180,500 with an overall income of about 5 billion FCFA, this represents a net income of 16,616 FCFA per person, or the equivalent of 32.2% of the poverty threshold estimated at 82,672 FCFA. Profit margins after deducting production costs are around 60,000 FCFA/ha for rainfed rice, 82,000 to 125,000 for lowland rice (non-developed and developed) and 168,000 to 270,000 FCFA for irrigated rice growing (both gravity-fed and pumped) (DGPER, 2009).

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<sup>2</sup> DPSAA/DGPER/MAH, 2010

## II. INVENTORY OF THE RICE SECTOR

### 2.1. Rice's policy role

Even though it ranks in only fourth place among the cereals grown there, rice is of great economic importance to Burkina Faso. It follows sorghum, millet and maize, both for area and for production. Specific measures taken by the Burkina Faso Government to support rice development are clearly aligned to national (CSLP, SDR), sub-regional (PAU, ECOWAP) and continental (CAADP) policies. New national policies for rice have been written into the National Programme for the Rural Sector (PNSR), which is the rural section of the Accelerated Growth and Rural Development Strategy (SCADD). These overlay the implementation of development plans, programmes and projects across hydro-agricultural developments (irrigated schemes and developed lowland), the establishment of consultative frameworks for rice sector stakeholders and other multi-faceted aids for producers. At the forefront of these projects, programmes and integrated frameworks are, among others, the Action Plan for the Rice Sector (PAFR), the Rainfed Rice Project (PRP), the Bagré Pôle de Croissance, the Sourou MCA-PDA, the Agricultural Sectors Development Company (SOPROFA), the Special Programme on Food Security (PSSA), the National Strategy for Sustainable Development of Irrigated Agriculture (SNDDAI), and the Burkina Interprofessional Committee on Rice (CIR-B).

### 2.2. Consumer preference and demand estimates

Consumers thoroughly enjoy locally-produced rice. However, people are driven to eat imported rice because of a social background characterized by poverty, large household sizes and weak cash incomes. National demand for milled rice is expected to reach 466,000 tonnes in 2018 thanks to population growth and an estimated annual rice consumption of 25 kg/head.

### 2.3. Rice production systems in Burkina Faso

Three distinct types of rice production are carried out in Burkina Faso: irrigated, lowland and strictly rainfed.

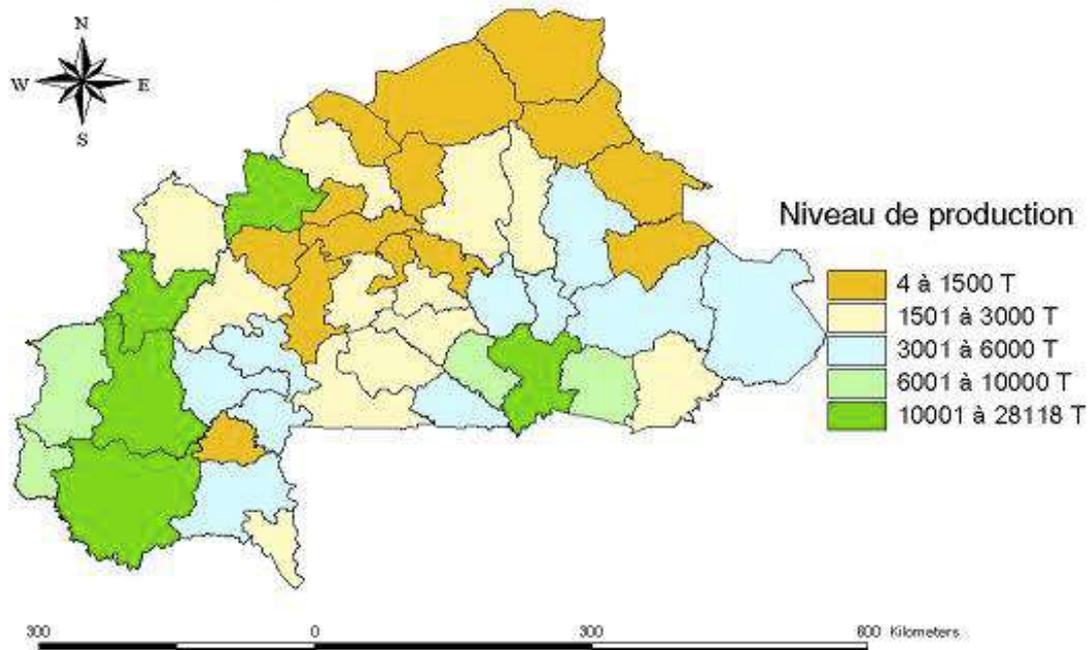
Between 1984–2009, irrigated rice growing accounted for an average 23% of the rice land area and provided nearly 53% of national rice production (DGPER, 2009). First introduced to Burkina Faso in the 1960s, it is the most productive form of rice growing in the country, giving yields of 4–7 tonnes/ha thanks to the double cropping season made possible by having full water control.

Lowland rice growing is the most widely practised traditional form of production throughout all regions of Burkina Faso, whether on sites with water control (traditional non-developed lowlands) or with partial-control (simple developed lowland or improved lowland). The figures for rice growing potential show 500,000 ha of workable land area of which less than 10% has been developed. Lowlands account for 67% of the rice land area and supply 42% of national rice production, with average yields from 1.3 t/ha (non-developed lowland) to 2.5 t/ha in developed lowland that has the potential for yields of 4 t/ha.

Strictly rainfed rice growing takes up about 10% of the rice land area and provides 5% of national rice production (DGPER, 2009) at an average yield of 1 t/ha. However, it could assume greater importance for national production, particularly if it can be slotted into the rotation systems practised in the cotton-growing regions. Being dependant on the amount and

distribution of rainfall, this type of rice growing is adapted to just those regions of Burkina Faso where the annual precipitation reaches or surpasses 800 mm.

## Zones de production de riz au Burkina Faso



Source: EPA 2010/DGPER/MAH

### 2.4. Rice sector stakeholders

Economic stakeholders are any basic self-supporting centre of action and decisionmaking unit that impacts on the economy. It could be just an individual (farmer, trader, consumer...) or a corporate entity (company, farmers' organization, development, research or funding body).

The main types of economic stakeholders directly involved in the rice chain are the producers, processors, traders (wholesalers, middlemen, retailers) and the consumers. The other indirect stakeholders in the rice sector are: inputs and machinery suppliers, credit institutions, seasonal workers (temporary labour), research and extension institutions and technical and financial partners.

#### 2.4.1. Direct stakeholders

These handle the goods either through purchase or sale when rights of ownership move from sellers to buyers. This category comprises producers, cooperatives or farmers' organizations, wholesale agents, retailers, processors and consumers.

The producers. They are part of the mass of small farmers each working on an average of one hectare a year on the large irrigation schemes or less than half-a-hectare within the smaller schemes and the lowlands. Women are just as likely to own plots on all types of production sites. Estimates show 324,045 producers, of which 30,166 are in the strictly rainfed system, 153,475 in developed lowland, 129,301 in non-developed lowland, 9,524 in irrigated schemes by gravity and 1,579 in pump-supplied systems (DGPER, 2010). Burkina currently has a

GIZ-financed programme aimed at reinforcing the role of women in production through promoting their access to land.

Paddy collectors. These are the agents who negotiate with farmers on behalf of the merchants, dealing with purchasing and handling. They are sometimes called “middlemen” but are few in number, collecting only 5% of the national paddy harvest.

The processors. There are two ways of processing paddy: parboiling and milling. Parboiling is predominantly a female activity. Women treat a little more than half (52%) of national paddy production. The workforce of female processors is estimated at 16,416 steamers (DGPER, 2010), who are organised into a National Union of Rice Parboilers.

Milling. The semi-industrial and industrial milling plants are located around large towns (particularly around Bobo-Dioulasso and more recently around Ouagadougou) and the major production areas (mainly the Sourou Valley and Bagré). These plants provide more than 30,000 tonnes/year of processing capacity for home-produced milled rice. As well as these plants, there are hundreds of cottage-size dehullers (village or district millers) who are the providers to whom most parboilers and some farmers turn.

The merchants.

- The wholesalers. They transfer product from rural markets to consumer markets where they sell to retail sellers and to consumers. These wholesalers may have more than 500 tonnes of storage;
- The small-scale wholesalers are typically those with ongoing trade in much smaller volumes of rice and do not necessarily deal with the large wholesalers. These traders have less storage capacity (less than 100 tonnes);
- The retailers. These are closest to and supply consumers with their requirements.

Consumers. These are the end-users and comprise households, restaurants, hospitals, canteens, boarding schools...

#### 2.4.2. Indirect stakeholders

They are involved in transporting produce, advising and financing agricultural activities. Their role is just as important at the production level as in processing or marketing (researching outlets and financing marketing activities). These also comprise inputs and machinery suppliers, the credit institutions, the carriers, the research and extension institutions, and the technical and financial partners... Bearing in mind the weakness in domestic production, the shortfall in national availability is made up by imports. Seven major rice importers, each capable of handling annually between 30,000–50,000 tonnes, account for 90% of imports<sup>3</sup>.

### 2.5. Government manpower and financial involvement

Government support for rice is evident through the implementation of projects and programmes. The main activities comprise the Action Plan for the Rice Sector (PAFR), the Rainfed Rice Project (PRP) and the Special Programme for Food Security (PSSA), and the Project to develop the South-Western Lowlands (PABSO). Government input in terms of research and extension has been considerable. Thanks to restructuring of agricultural research during the 1980s, eight national research programmes were defined by the Environmental and

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<sup>3</sup> COTECNA, 2009

Agricultural Research Institute (INERA), including the National Research Programme on Rice and Rice Growing.

In addition the Government has set up a specialized advisory programme for rice growing sites outwith the usual extension network. Moreover, the Government has always supported the establishment of irrigation schemes to increase production.

When the food crisis hit in 2008, the State introduced structural measures (support for improved seed, machinery, fertilizer and producer organization) to underpin the rice sub-sector. Within two years this support had been applied to 21,535.5 tonnes of mineral fertilizer (13,340 tonnes of NPK and 7,913.5 tonnes of urea) and 6501 tonnes of improved seed.

Women play a major role in rice systems and are at the centre of a host of farming activities even if very few women are in charge of farms. They are increasingly specialising within the rice sector, particularly in processing (parboiling) and marketing.

## **2.6. Comparative advantage of national rice production**

To understand producer incomes, estimates were made of the average costs of production for dehulled rice in the most representative rice growing systems in Burkina Faso: strictly rainfed (PS); undeveloped lowland (BNA); developed lowland (BFA), large irrigated and dammed schemes (GPAB), and large pump-irrigated schemes (GPPP).

Of all these systems, the GPPP have the highest average paddy production cost of 98.08 FCFA/kg (i.e. at Sourou). In cost terms, the State has proposed a relatively large producer margin of 30 FCFA/kg with a 15 FCFA/kg for the processor<sup>4</sup>, a wholesaler margin of 10 FCFA/kg and a retailer margin of 15 FCFA/kg. Therefore, whatever the production system adopted, rice growing is financially viable for most producers, particularly when it is compared to the most frequently grown cereal crops, millet or sorghum.

Selling dehulled rice covers the annual repayment cost of loans and seasonal costs totalling an average 346,167 FCFA/ha. As a result most farmers prefer to sell their production as dehulled rice. Farmer involvement in processing is a major accomplishment, which allows them to garner some of the added value (around 15 FCFA/kg of paddy) downstream in the rice supply chain. However, local rice remains less competitive than imported rice in price, marketing and the quantity available. Strong action is needed to ensure the competitiveness of local rice and to revitalize the sector.

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<sup>4</sup> Dehulling cost is put at FCFA 45 /kg

### **III. CHALLENGES AND OPPORTUNITIES**

#### **3.1. Main challenges and constraints**

##### *3.1.1. Cross-border and regional issues*

Cross-border issues concern regional problems such as ECOWAS policy, joint taxation, inputs supply circulation (seed, fertilizer, pesticides) and production output, particularly rice, as well as management of shared water resources. These issues are thrashed out within regional organizations such as WAEMU, ECOWAS, the Niger Basin Authority, the Volta Basin Authority etc.

##### *3.1.2. Research deficiencies*

Lack of results on post-harvest technology is the research sector's main weakness. However, it has to be emphasized that the machinery department of the Applied Science and Technology Research Institute (IRSAT) has obtained valuable know-how on the techniques and machinery for soil preparation for rice growing, including the draught-animal tined soil loosener. A powered thresher-cleaner has been adapted for post-harvest use in conjunction with AfricaRice.

#### **3.2. Assets and opportunities**

##### *3.2.1. Local rice potential to reduce poverty*

Rice accounts for about a 3% share of the Burkinabe population's staple foods. An increase in production would allow producers to improve their incomes, increase the sector's contribution to GDP and reduce the deficit in the country's balance of payments.

##### *3.2.2. Land tenure system*

A rural land tenure system was introduced by Law N° 034-2009/AN of June 16 2009 in which Article 1 set out the land base and tenure system for rural land as well as the principles of security of tenure for all stakeholders in rural land. Three (3) categories of rural land were identified: the State's rural land base, the territorial communes' land base and the inherited land of individuals. It should be noted that this law made it easier for private individuals and the territorial communes (regional and communal) to undertake rural development.

##### *3.2.3. Research/development benefits*

The main agronomic benefits from rice research are centred on a substantial range of improved varieties (60 or so, covering the three types of rice growing practised in Burkina Faso) and efficient production technologies that bring out the potential of these better varieties: new fertilizer compounds adapted to the specific nutritional needs of rice, a technology package of integrated protection against disease, insects and nematodes, and irrigation and water management techniques etc.

In recent years new varieties of rice have been introduced based on crossing the African rice, *Oryza glaberrima*, with its resistance to biotic constraints (pests and diseases) and local abiotic constraints (drought, iron toxicity etc.), with the high yielding Asian rice *Oryza sativa*.

Seven varieties of this new type of rice – better known as NERICA (New Rice for Africa) have been released (INERA, 2005b) of which four were adapted to lowland/irrigated ecologies and the other three to rainfed rice.

The efforts of all stakeholders have contributed not insubstantially to the national rice production increase. Besides an increase in planted land, it is yield improvements obtained by adopting rice research technologies<sup>5</sup> that are responsible for 53.36% of the production increase. As far as machinery is concerned, IRSAT developed a general-purpose, tined soil loosener, an animal-drawn, three-row seeder for rainfed rice and powered threshers (12 hp and 15–16 hp).

#### *3.2.4. Human and institutional capacity*

Burkina Faso's rice growers have a wealth of experience in rice production techniques, and furthermore the country has human and institutional capacity with a substantial rural workforce able to sustain the development of rice growing. In addition, there are research centres, stations and units in all the country's agro-ecological zones. INERA's rice programme is based around a 15-strong team of scientists and around 20 laboratory technicians working on biotechnology, entomology, virology, plant pathology and nematology. Research teams at IRSAT also cover machinery, energy and food technology. Rural development specialists in agriculture and extension, agricultural engineers and technicians are trained at several institutes and schools. These are the Institute of Rural Development (IDR), the Polytechnic University of Bobo-Dioulasso, the Agricultural School at Matourkou (CAP) and the International Institute of Water and Environment Engineering (2iE).

The National Seed Service at MAH controls the production and certification of seed, and the country also has a variety and agricultural pesticides release committee. The different elements of extension and support advice from the Ministry responsible for agriculture form a large network covering all local administrative areas through 210 extension agents, of which 10 work full-time on rice with the remainder devoting part of their time to rice.

As for regulation, there are laws covering seed, fertilizer, plant health protection, bioethics and the environment. As a result of the 2008 food crisis the Government now plays a strategic role through SONAGESS in the supply flow and marketing of local rice (purchases of paddy and dehulled rice etc.).

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5 OUEDRAOGO et al, 2002; INERA, 2005 a.

## **IV. NATIONAL RICE DEVELOPMENT STRATEGY**

Expanding rice production has always been a strategic issue within the National Food Security Policy. This policy has been reaffirmed in the Rural Development Strategy (RDS), which is the reference framework for all public action in the rural sector. The National Rice Development Strategy (NRDS) is therefore in perfect accordance with the RDS. The NSDR sets out to make rice growing one of the key tools for achieving the country's food security.

### **4.1. NRDS objectives**

The overall objective of the NRDS is to contribute to a sustainable increase in both the quantity and quality of national rice production with the aim of satisfying the needs and demands of consumers. In particular, it sets out to:

- intensify and increase rice production
- improve the quality of the finished product reaching the market
- strengthen stakeholder capacity in the rice sector

### **4.2. Strategic directions/key actions**

The selected strategic directions for achieving the aims of the current strategy are:

1. an increase in the developed land area
2. sustainable intensification of rice production
3. adding value to rice production
4. Research – dissemination, support advice, capacity building of stakeholders.

### **4.3. Priority actions by strategic direction**

Four strategic directions have been chosen as the targets of the following priority action:

#### *4.3.1. Increase in the developed land area*

Under this strategic direction it is proposed to further increase the added value coming from previously developed sites and that from new development of sites used for rice growing (undeveloped lowland and strictly rainfed sites). The action to be taken comprises:

- Gaining improved knowledge of the potential of irrigable sites and lowland suitable for development
- Restoring degraded schemes and salvaging abandoned sites (developed)
- Undertaking the expansion of existing infrastructure
- Developing new irrigation schemes and lowlands
- promoting new works for the conservation of soil and water resources
- developing the practice of supplementary irrigation
- intensifying water resource mobilization through ponds, market garden wells, dams etc. and optimizing their use.

#### *4.3.2. Sustainable intensification of rice production*

The target objective of direction 2 is an increase in rice production by optimal use of improved seed, fertilizers and water, mechanization of cropping operations, security of land

tenure, use of tailored technology packages, adoption of environmentally-friendly cropping practices etc.

Agreed action is:

- To improve inputs use (improved seed, mineral fertilizers, plant protection products)
- Strengthen farm mechanization
- Improve water management by increasing water-use efficiency.

#### 4.3.2.1. Improvement of inputs use (certified seed, fertilizers and plant protection products)

##### ❖ Seed

Obtaining the increase in rice production envisaged in the SADR requires guaranteed production of sufficient quality seed and promotion of its use by all rice farmers. Based on the NRDS land use goals, 9,750 tonnes of certified seed is required – 6,700 tonnes for the period 2008–2015 and 3050 tonnes for the period 2016–2018. This means producing 975 tonnes of basic seed at an average of 97 tonnes per year. To do this it is necessary to:

- develop a sustainable system under the stewardship of INERA and the DGPV for producing and distributing basic and certified seed of improved varieties such as NERICA;
- strengthen the capacity of seed growers in using techniques of production, cooperative organization, marketing, financial matters and equipment;
- produce seed on the plains developed with total water control (Bagré, Banzon, Sourou, Vallée de Kou etc.);
- strengthen the certification system;
- strengthen producer awareness on how to use improved seeds, particularly their regular renewal;
- encourage entrepreneurship in seed production;
- inform and alert stakeholders on the legislation and regulations covering production, marketing and use of seeds.

##### ❖ Mineral fertilizers

- bring about the establishment of new fertilizer plants, particularly for rice fertilizers, in response to the estimates that 62,475 tonnes (39,975 t NPK and 22,500 t urea) are needed by 2018 for rice growing, among others;
- set up a fail-safe system to ensure farmers can obtain fertilizer supplies;
- strengthen the establishment of small outlets so inputs are available locally;
- introduce a subsidy or remove taxes from imported fertilizer or fertilizer-making equipment so costs can be reduced.

##### ❖ Organic fertilizer

- continue to raise farmer awareness on the production and use of organic manure
- strengthen farmers' capacity to produce organic manures (storage pits, compost heaps etc.);
- support building sturdy storage pits;
- develop or introduce machinery for shredding straw to produce organic matter.

##### ❖ Plant protection products

- ensure routine seed treatment;
- ensure crop health is safeguarded, using action thresholds;
- inform/alert and train stakeholders on existing legislation governing the import and use of pesticides;
- promote the use of natural pesticides in association with the GIPD's popularised technology packages.

#### 4.3.2.2. Strengthening mechanization of rice growing

Encouragement to mechanise rice growing will be achieved by, among others, the establishment of a Government line of credit to enable rice producers and private contractors to have access to machinery. This strategy will enable independent operators to obtain long-awaited financing set at 7% of the overall budget of the PNSR. In practical terms, this line of credit will allow the purchase of machinery enabling:

- increased mechanization of soil tillage, cropping operations (leveling, sowing, weeding etc.), harvest and post-harvest activities etc.;
- the emergence of service providers for tillage and post-harvest activities;
- purchase of spare parts to enable farm equipment to be maintained;
- establishment of fabrication workshops for specific agricultural/processing machinery and equipment to enable certification of seed quality;
- procurement and use of improved processing technology;
- infrastructure development and storage/conservation equipment to allow processing in rice-growing areas.

#### *4.3.3. Adding value to rice production*

The main aim of this strategic direction is to strengthen post-harvest activities such as dehulling by introducing tailored post-harvest technology (threshers, parboilers etc.) and improving the quality and marketing of national rice reaching the market. It aims above all at increasing the amount of rice processed and traded so that production is encouraged and grower incomes improved. In particular, it will sustain an enabling environment in the rice value chain. Putting this into effect will mean having a similar line of credit for equipment to that laid down for machinery. To make it work requires the following action:

- restore and/or build community infrastructure needed for post-harvest activities (stores, drying and threshing areas, threshers...) in rice-growing areas;
- underpin the emergence of private operators to take charge of processing, conservation/storage, transport and marketing;
- support paddy collection for processing, the establishment and operation of a collection system and marketing the dehulled rice;
- support setting up a distribution network for Burkinabé rice (paddy, milled rice);
- promote Burkinabé rice consumption, particularly through brand creation;
- promoting added value of rice by-products;
- sustainable rehabilitation of the national rice observatory.

#### *4.3.4. Research dissemination, support advice, capacity building of stakeholders*

##### 4.3.4.1. Research/design and dissemination of innovative and effective techniques and technology

The NRDS will contribute to strengthening the human, scientific and material capacity of national rice research provided it can be done efficiently. To this end it is necessary to:

- strengthen the national research system in terms of rice innovation and creativity and introduce high-yielding rice varieties adapted to the country's soil climate through participatory variety selection trials and in response to consumer needs;

- build and/or fit out centres for research, professional training and extension;
- provide substantial support for research into bulk production of quality pre-basic and basic seed;
- develop integrated management methods against the main rice pests and diseases;
- disseminate integrated soil fertility management techniques in rice-growing areas;
- develop and diffuse type-specific adapted rice technology;
- train stakeholders in financial organization and management.

#### 4.3.4.2. Support advice and extension for the rice sector

The NRDS will also strengthen the capacity of the advisory system on the human, technical and material scales to enable it to play a full part in training the producers. At this level, the following action is awaited:

- design and introduce a plan for advisory support and training targeting farmers;
- increase the staffing of the advice support and research systems to make sure the strategy works;
- provide farmers and users of agricultural equipment with training;
- carry out skills updating and/or training of technicians and farmers in the technical guidelines for rice production in differing ecologies;
- train stakeholders in harvest and post-harvest activities to obtain better quality paddy and milled rice;
- turn the acquired knowledge into formats adapted to target groups and in local languages;
- take account of gender issues during training.

The NRDS stresses the importance of having sufficient human resources to carry out rice research and extension. These requirements for the coming years are set out by specialism for each activity in Table 1 below. Training and information are inseparable from the activities of capable and efficient scientists and extension agents if they are to achieve the best dissemination of research results.

Table 1

	Scientists with PhD or a Maîtrise			Research technicians			Agricultural extension agents		
	Total (*)	Full-time rice specialists	Part-time rice specialists	Total	Full-time rice specialists	Part-time rice specialists	Total	Full-time rice specialists	Part-time rice specialists
2008	23	14	9	19	17	2	210	10	200
2013	28	19	9	37	22	15	360	60	300
2018	32	23	9	38	23	15	600	100	500

NB: the specialists to be trained are: plant breeders, agronomists, socio-economists, agroeconomists, machinery specialists, water engineers, food technologists, soil scientists, plant protection experts.

#### 4.3.4.3 – Stakeholder organisation

- support the creation/activation of cooperative organisations to take on the roles of inputs suppliers, mechanising the sector (CUMA<sup>6</sup>) and managing production and marketing activities;
- supporting the producers organisations to manage and maintain their infrastructures;
- rejuvenating the interprofessional body (CIR-B) involved in strategy implementation so it actively participates in promoting national rice;

<sup>6</sup> Farm Machinery Use Cooperative (CUMA), a form of organisation used in France

- support the emergence of a maintenance and repair network for agricultural equipment;
- set up an information system for sector stakeholders.

#### 4.4. Outlook and approach to implementing the NRDS

##### 4.4.1. Land area, yields and production by type of production

A study of the three types of production practised in Burkina Faso reveals major potential for increasing the useable land area, particularly for growing rice in the lowlands and for strictly rainfed rice. Between 1998–2007 the average area of land down to rice each year was 45,000 ha, of which 14,000 ha was irrigated<sup>7</sup>. Average paddy production over the same period was 108,000 tonnes, equivalent to 64,800 tonnes of milled rice<sup>8</sup>. Yield levels varied from one type of rice growing to another. On average, the yield of strictly rainfed rice was about one tonne per ha, 2 tonnes/ha for lowland rice and 5.5 t/ha for irrigated rice. These yields can be improved, notably by employing appropriate technology packages. With greater intensification, irrigated rice in particular could safeguard national production. In addition it also gives the best net return from a substantial increase in national production. A breakdown of land areas, yields and production by type is shown in Table 2.

Table 2. Baseline data by production type: 2008 position and outlook

	Rainfed rice			Lowland rice			Irrigated rice			Total				
	Area (ha)	Yld (t/ha)	Prod (t)	Area (ha)	Yld (t/ha)	Prod (t)	Area (ha)	Yld (t/ha)	Prod (t)	Coef	Total prod (t)	Area (ha)	Yld (t/ha)	Prod (t)
2008	12,000	1.1	13,200	47,000	2.5	117,500	12,500	5.5	68,750	1.52	104,500	715,000	3.03	235,200
2015	32,000	1.5	48,000	82,000	3.5	287,000	17,500	6	105,000	1.66	174,300	131,500	3.67	509,300
2018	62,000	2.5	155,000	110,000	4	440,000	19,500	7	136,500	1.81	247,065	191,500	4.50	842,065

Expected 2018 paddy production of 842,065 tonnes (537,342 tonnes of milled rice) will cover the projected national demand of 466,000 tonnes of milled rice in 2018.

##### 4.4.2. Long-term production price target

The long-term price strategy envisages a reduction in production, processing and marketing costs sufficient to make local rice competitive with imports. Prices are expected to stabilize over the next 10 years to give producers an average price of around 180 FCFA/kg for paddy and an average consumer price of 350 FCFA for milled rice. Under the conditions implemented by the NRDS such prices repay input costs and allow local rice to compete with imported rice.

To achieve this, the Government must (i) continue its support to farmers to reduce production costs, (ii) foster links with processing to improve yields from processing paddy (from 60–62% at present to at least 65%) so that the competitiveness of local rice can be strengthened. The various professionals involved in the sector must work alongside the Government efforts

<sup>7</sup> DPSAA/DGPER/MAH (2008)

<sup>8</sup> Le taux de rendement à l'usinage utilisé est de 60%

to give local rice visible presence and availability to enable its promotion targeting consumers. Indeed, the competitiveness of local rice hinges essentially on a reduction in paddy production costs and better processing yield.

#### *4.4.3. NRDS implementation stages*

The current challenges and issues facing the rice sector in Burkina Faso are similar to those expected in the future. That is why any action undertaken to increase national rice production must address the short, medium and longer terms.

In the short to medium term (2008–2015) production growth relies essentially on intensification, rehabilitation and maximizing existing infrastructures, better stakeholder organization and capacity building of the training agencies. However, new developments are feasible, even if the possibilities for expansion are limited, particularly for the irrigated schemes (too little time to gather the necessary resources and carry out the works).

In the long term (2016–2018), while stepping up efforts to build on action to “intensify production” and to “enlarge the production area”, there will be particular emphasis on improving the sectoral environment (professionalization of stakeholders, support for bringing in and setting up new rice sector stakeholders, support to promote plants handling inputs and processing, improvement of collection and distribution channels for paddy and/or milled rice, and the implementation of legislative and regulatory instruments to protect the sector).

#### *4.4.4. NRDS governance*

The importance and complexity of the rice sector means that NRDS implementation must be carried out across all the programmes and projects of the State, the technical and financial partners, and sector stakeholders. This means a unique approach to governance is needed. The implementation will be based on principles of consultation between the stakeholders and their accountability within the sector. Annual evaluation will be set up to quickly correct any dysfunction and insufficiencies that are picked up. To do this, NRDS governance will pivot on three units:

- The steering unit (PNSR steering committee)
- Technical advice support unit (the NRDS interministerial technical monitoring committee)
- Executive arm (NRDS coordination unit).

##### 4.4.4.1. The steering unit (PNSR steering committee)

The PNSR steering committee, the official steering body for the NRDS, is responsible for directing and steering strategy by fixing priorities and strategic objectives. It comprises the ministers responsible for agriculture, livestock, the environment, research, and economy and finance.

##### 4.4.4.2. Technical advice support unit (the NRDS interministerial technical monitoring committee)

The NRDS interministerial technical monitoring committee was appointed by decree as the representative body for scientific advisory support and techniques. Its role is to support implementation of the NRDS as well as encourage synergies. It suggests directions and underpins activity monitoring. This committee will also evaluate performance and strategy

impact and supply technical information, especially putting forward relevant innovations for testing and dissemination in the various zones covered by the NRDS. It comprises the secretaries-general of the ministries responsible for rural development, task force members and resource persons.

#### 4.4.4.3. Executive arm (NRDS coordination unit).

The NRDS coordination unit is the implementing body and is led by a national coordinator, reporting to the steering unit. He oversees the consistency of priorities and directions at both the regional and national levels. He is helped by a multi-disciplinary team with proven expertise in rice growing, development, monitoring and evaluation and rural sociology. Moreover, in terms of institutional arrangements, the four technical units of the NRDS are led by coordinators of programmes relevant to the four strategic directions.

At the local level the institutional structure of the NRDS is built on a strong and dynamic partnership between the coordination unit and the devolved and decentralized technical services of NGOs active in the rural development sector. To this partnership must be added the close collaboration between the NRDS coordination unit and the traditional chiefs, elected representatives and primary stakeholders (Cf. organization chart in Appendix 3).

#### *4.4.5. Cross-border questions and partnership strengthening*

Producers and traders can stock up on both the domestic and regional markets, which brings up the problem of inputs quality and the risk of disease. Therefore, particular attention has to be given to cross-border questions, especially concerning the trade in fertilizers and pesticides.

The extent of the hydrographic network raises further cross-border issues. Burkina Faso is situated in the upstream parts of three international watersheds shared with neighbouring countries into which most of these watercourses drain. The issues raised by this situation must be taken into account during strategy implementation (availability, use and resource sharing, environmental problems). Furthermore, the collaboration between national structures and regional and international institutions must be strengthened.

### **4.5. Results and expected impact**

Implementation of the National Rice Development Strategy will have a major impact on securing and enlarging rice production. By 2018, 191,500 ha will be in use and generating 842,065 tonnes of paddy, giving around 547,342 tonnes of dehulled rice worth 191.6 billion FCFA, and providing average returns worth almost 151.6 billion FCFA to producers.

Implementation of the strategy will also have considerable impact on the quality of life of the local population, which currently practises subsistence farming using rudimentary equipment and lives in poverty-stricken circumstances. The anticipated average annual income per individual producer is put at 576,562 FCFA each for nearly 200,000 farmers. The breakdown by system is put at 618,479 FCFA for a grower in the strictly rainfed system (33,833 farmers), 405,000 FCFA in the lowland (146,667 farmers), and 1,710,450 FCFA for each of the 19,500 farmers in irrigated systems.

Implementation of the strategy should provide a short-term base to reach the first milestones for sustainable development of Burkinabé rice growing. With this in mind, adequate mechanisms are essential, not just from the forward planning perspective but also that of monitoring and evaluation, while appropriate funding must be raised.

## V. FINANCING THE NATIONAL STRATEGY

### 5.1. Costs

The cost of the National Rice Development Strategy up to 2018 is estimated at more than 258 billion FCFA (258,518,500,000 FCFA), split between the strategic directions as follows:

Table 3. Breakdown of the NRDS cost by strategic direction

Description	Amount (FCFA)		Total	Relative share
	2008–2015	2016–2018		
1 Development	105,408,750,000	35,136,250,000	140,545,000,000	54.7%
2 Intensification	39,086,250,000	13,028,750,000	52,115,000,000	20.16%
3 Adding value to Production	33,165,000,000	11,055,000,000	44,220,000,000	17.11%
4 Capacity building	10,836,000,000	3,612,000,000	14,448,000,000	5.59%
5 Operations	3,892,875,000	1,297,625,000	5,190,500,000	2.01%
6. NRDS governance	1,500,000,000	500,000,000	2,000,000,000	0.77%
<b>TOTAL NRDS COST</b>	<b>193,888,875,000</b>	<b>64,629,625,000</b>	<b>258,518,500,000</b>	

### 5.2. Strategy financing

Finance for the strategy will come from four major groups of stakeholder: the State, the territorial collectivities, the technical and financial partners, and the private operators and benefiting populations.

#### 5.2.1. The State

The Government will continue to finance the rice sector. The significant budget allocations made in recent years to support national rice production growth have been well received and will be strengthened.

In 2008 the Planning and Study Directorate of the MAH recorded 24 Government-linked projects either partly or fully aimed at rice. Moreover, the Government should take institutional and tax measures to incentivise private sector investment in the rice sub-sector and strengthen its support (to subsidize) for research activities into developing rice growing.

#### 5.2.2. The territorial collectivities

As self-administered State institutions, the collectivities should agree to provide rural sector finance, particularly for the rice sub-sector. They should also contribute to managing sustainable development and support private investment in the sector.

#### 5.2.3. The technical and financial partners

The scale of the challenges to be met under the current strategy means raising resources at both the financing and technical levels. That is why the contribution of development partners (PTF, NGOs, associations) will be essential for better strategy implementation.

#### *5.2.4. Private operators and the benefiting population*

In the current context of State withdrawal from manufacturing sectors and of joint projects, national private sector operators, including those from outside the country, will join with direct rice sector stakeholders to contribute to strategy implementation. Indeed, besides the call for private investment in rice, when it comes to benefiting populations, the principle of cofinancing the investment must be favoured which means sharing the development costs between the State and the beneficiaries whose contribution will be in the form of community manpower to carry out works.

All kinds of financial instruments and institutions should be called upon to finance the strategy, particularly including:

- applying rural land tenure law to give farmers land titles they can use as collateral against loans;
- encouraging the use of loans underwritten by future crop sales;
- support to micro-finance lenders to finance rice activities through government projects and programmes;
- allowing developers to obtain guarantees from SOFIGIB to underwrite their borrowings from lending institutions.

To enable sustainable financing over-and-above the NRDS implementation, it would be wiser to set up a financing fund for rice growing and related activities.

## **VI. NRDS RISK ANALYSIS**

The major factors that could make the NRDS fail have been identified and broken down according to probability and impact. The analysis shows only a modest level of general risk. Steps to mitigate any probable risks that could have a strong negative impact have already been taken and integrated in the NRDS.

**Land tenure issue:** applying the regulations contained in the land tenure law is essential for professionalization of rice producers. It will contribute to security of tenure and encourage investment to intensify rice production.

**Gender mainstreaming:** Because of the strong involvement of women and youth in rice growing, their participation in NRDS implementation is essential to achieving its objectives. Therefore they have to be fully involved in all its activities.

**Respect for the environment:** in the context of climatic change, it is vital that all activities respect the environment to guarantee sustainable development of the sector. Environmental impact studies must be carried out before every sizeable activity, particularly site development, and safeguards rigorously applied. It is also essential to adopt a sustainable vision and sound management of existing developed infrastructure to prevent environmental issues.

**Opening up production sites:** new access routes to major rice growing areas are essential to enable both the supply of inputs and transport of production. Efforts must be made to build and rehabilitate feeder roads.

**Access to funding:** the involvement of all stakeholders, particularly from the private sector, in the rice value chain requires the introduction of a line of credit to underpin mechanization, processing and marketing; likewise for establishing fertilizer plants and equipment workshops.

**Climatic change and variable rainfall:** agricultural production is subject to the vagaries of the weather. At the same time there is very little funding for change programmes and farmers seldom stick with new methods of intensification. As a result water control is a major factor in successful rice growing developments. However, because of the huge cost of hydro-agricultural infrastructure and relatively short implementation period for the NRDS, it will be best to concentrate on rainfed rice (lowland development and strictly rainfed systems) backed up by the development of supplementary irrigation systems.

**Non-observance of technical standards in carrying out works and/or developments:** rural development aims to set up production infrastructure capable of a sustainable contribution to the development of rice growing. This infrastructure should meet people's needs but also have a service life that complies with usual technical standards. So international experts or highly qualified national officers must oversee their construction by private companies to reduce any moral hazard associated with the quality of the works.

Financial instability (exchange rate): the original funding allocation for implementing NRDS projects and programmes could be reduced by exchange rate fluctuations. It is therefore desirable to negotiate the funding arrangements in a standard unit of account or in CFA francs.

Weak take-up by the stakeholders: the implementation process for several projects and programmes has already encountered a communication problem preventing their uptake by stakeholders, resulting in failure to obtain the resources needed to carry them out and reach their objectives. The formulation process for the NRDS is participative but must contain a communication plan for its roll-out and the buy-in by the target groups.

Table 4. Risks and risk mitigation

Risks	Mitigating steps	Risk evaluation
Availability of human, financial and material resources, both in time and quantity	* Office space and equipment as well as salaries brought under the wing of the NRDS	M
Rainfall variability linked to climate change	*Develop supplementary irrigation (wells, ponds, drains) *Develop suitable varieties *Apply integrated soil fertility management (CES/DRS)	S
Failure to comply with accepted standards for carrying out works and/or development	*set up a special office to supervise works *train technical agents	M
Financial instability (exchange rates)	*negotiate projects in FCFA or in a unit of account	N
Poor access to credit	*set up a line of credit	M
Land tenure insecurity	*publicise the law and how it applies to rural land tenure *keep on top of the law's implementation *carry out socioeconomic surveys in advance of developments	M

Low follow-through by participants	stage awareness campaigns	M
Inconsistent approaches by partners in projects and programmes	*harmonisation discussions within the Interministerial Committee *adopt a consensual approach for inclusion in the protocols of agreements	M
Weak attention to gender along the value chain	Make an announcement on positive discrimination favouring women	N
Failure to take environmentally-friendly steps	*pre-implementation NSDR environmental impact studies *develop and implement a social and environmental management plan	M
Difficulties with inputs supply transporting production	*build access roads to sites	M
Low follow-through by participants	stage awareness campaigns	S
<b>Overall risk evaluation</b>		<b>M</b>

Risk evaluation: High (H); Substantial (S); Modest (M); Slight or Negligible (N).

## VII. SUSTAINABILITY AND REPEATABILITY

### 7.1. Sustainability

Sustainability of rice growing activities is built into the NSDR thanks to the extent of the various safeguards, risk analyses and limitation measures. The country's agricultural policy is very favourable to rice growing in terms of government measures to support production and adding value to rice (input and equipment subsidies, local price promotion, fundraising action for investment in irrigation development etc.).

The socioeconomic sustainability of the NRDS will be strengthened by choosing and promoting appropriate technology that could generate sustainable resources and by establishing rules of good management for the infrastructure. The rice sector is also economically viable and rice generally becomes a cash crop for farmers. Furthermore, the development of varieties adapted to various ecosystems (notably with a short cycle and high yield for strictly rainfed conditions), will help increase producer incomes in the upland as well as the cotton-growing regions. Just as important for the sustainability of rice growing in Burkina is the presence of strong internal demand guaranteeing market opportunities for the stream of rice products.

In addition, there is a well-established institutional support option enshrined in the standing structures of the Ministry responsible for agriculture and the dispersed and/or decentralised technical services. This is available in the form of an agreed contract-plan and/or signed terms of agreement. This approach will allow agents of devolved and or/decentralized services to improve their advisory support performance in rice farming zones.

### 7.2. Scaling out

Confirmation of its repeatability is shown by the strong expansion of rice growing development in rainfed systems (lowland and upland) due to the interest and enthusiasm of the beneficiaries.

Putting the NDS into operation is based on accumulated experience and the establishment of sustainable models of rice practices suitable for replication. This kind of replication and propagation of know-how is also supported within a favourable institutional framework (PNSR).

Under the national plan, this release from constraints to rice development will be multiplied within the NRDS framework. Therefore, it is the advantages (financial and dietary) gained by farmers from the rice sector that are the driving force for the expected sustainability of the gains in knowledge.

## **CONCLUSION**

The current National Rice Development Strategy document demonstrates the whole-hearted willingness of the Government not only to increase national rice production, but also to make rice growing a special tool for achieving national food security.

The country has major rice potential. The NRDS sets out to be the framework for all activities aimed at making use of and creating wealth from this potential. This is the foundation for its strategic directions. These are:

1. an increase in the developed land area
2. sustainable intensification of rice production
3. adding value to rice production
4. Research – dissemination, support advice, capacity building of stakeholders.

However, the results and impacts of implementation of the current strategy remain tied to the Government political will to generate the required human, financial and physical resources.

The success of the strategy also depends on availability of technical and financial partners to assist the Government with implementation. Uptake of the strategy document by the various levels of stakeholder; particularly rice growers and the territorial collectivities on the one hand and the decision of economic operators to invest in the sub-sector on the other, are just as important to the success of the strategy objectives.

## APPENDICES

### Appendix 1: Summary of constraints and opportunities in the local rice sector

Areas	Constraints	Opportunities/assets
Production	<ul style="list-style-type: none"> <li>• Insufficient use of water resources</li> <li>• Lack of advisory and extension agents</li> <li>• Lack of soil preparation equipment</li> <li>• Low inputs use (fertilizers and pesticides)</li> <li>• Low adoption of technology packages and the cropping calendar</li> <li>• Soil degradation</li> <li>• Poor water management</li> <li>• Weak stakeholder organisation</li> <li>• Insufficient and irregular rainfall for rainfed rice</li> <li>• Persistent pests and disease</li> <li>• Heavy evapotranspiration</li> <li>• Stakeholder illiteracy</li> <li>• Difficult access to crédit</li> <li>• Lack of improved land</li> <li>• Lack of drying and storage facilities</li> <li>• Weak rice rice research resources</li> </ul>	<ul style="list-style-type: none"> <li>• Strong political will and farmer enthusiasm for rice activities</li> <li>• Existence of a major draught animal energy resource</li> <li>• High level of use of improved rice varieties</li> <li>• Existence of high-yield potential varieties accepted by consumers</li> <li>• Dynamic agricultural research and extension services for technology preparation and transfer</li> <li>• Existing potential of around 500,000 ha of lowland suitable for development</li> <li>• Existence of around 233,500 ha of irrigable land of which less than 10% is already in use</li> <li>• About 1,200 existing dams and water barriers</li> </ul>
Processing	<ul style="list-style-type: none"> <li>• Legislative and regulatory environment less than favourable to developing industrial-scale processing</li> <li>• Lack of post-harvest machinery and tools</li> <li>• Low quality and lack of market supply of paddy</li> <li>• High cost of factors of production, particularly energy</li> <li>• Poor performance of the current processing plants</li> <li>• Difficulty collecting in paddy (linked to lack of producer organisation)</li> <li>• Low financial and technical capacity of processing plants (operating funds)</li> <li>• High cost of machinery maintenance (spare parts, repairs etc.)</li> <li>• Difficult access to credit</li> <li>• Scarcity of suitable parboiling equipment</li> <li>• Weak storage capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Emergence of a private sector</li> <li>• Existing organizations of women parboilers</li> <li>• Existing policy for expanding paddy production</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Lack of supply of paddy on the market</li> <li>• Heavy imports of rice</li> <li>• Absence of a rice marketing network</li> <li>• Poor storage infrastructure and conditioning equipment</li> <li>• Poor availability of local rice on the national market</li> <li>• Insufficient marketing of local rice</li> </ul>	<ul style="list-style-type: none"> <li>• Existing national market with strong demand</li> <li>• Good quality local rice</li> </ul>



## Appendix 2: Detailed strategy cost

	Unit	Quantity			Unit cost	Total cost (FCFA)		
		2008-2015	2016-2018	Total		2008-2015	2016-2018	Total
<b>1. Development type</b>						<b>105,408,750,000</b>	<b>35,136,250,000</b>	<b>140,545,000,000</b>
Managed lowland	ha	35,000	28,000	63,000	800,000	28,000,000,000	22,400,000,000	50,400,000,000
Irrigated scheme	ha	5,000	2,000	7,000	10,000,000	50,000,000,000	20,000,000,000	70,000,000,000
Rainfed (anti-erosion sites)	ha	20,000	30,000	50,000	100,000	2,000,000,000	3,000,000,000	5,000,000,000
Dam construction	each	-	-	-	2,000,000,000	-	-	-
Wells (a)	each	1,500	1,800	3,300	3,000,000	4,500,000,000	5,400,000,000	9,900,000,000
Streams (min. 2 per province)	each	35	65	100	40,000,000	1,400,000,000	2,600,000,000	4,000,000,000
Powered pumps (min. 2 per province = 1 pump/stream)	each	35	65	100	3,000,000	105,000,000	195,000,000	300,000,000
Water piping equipment (i)	each	262,500	682,500	945,000	1,000	262,500,000	682,500,000	945,000,000
<b>2. Intensification</b>						<b>39,086,250,000</b>	<b>13,028,750,000</b>	<b>52,115,000,000</b>
<i>Seed</i>								5,850,000,000
Certified seed	kg	6,700,000	3,050,000	9,750,000	500	3,350,000,000	1,525,000,000	4,875,000,000
Basic seed	kg	670,000	305,000	975,000	1,000	670,000,000	305,000,000	975,000,000
<i>Fertilisers</i>								<b>23,464,000,000</b>
Support for secure manure storage (b)	each	2,000	2,800	4,800	45,000	90,000,000	126,000,000	216,000,000
Straw/organic matter chopping equipment (f)	each	20	30	50	110,000	2,200,000	3,300,000	5,500,000
Mineral fertilizer (NPK)	kg	20,100,000	19,875,000	39,975,000	300	6,030,000,000	5,962,500,000	11,992,500,000
Mineral fertilizer (urea)	kg	10,650,000	11,850,000	22,500,000	500	5,325,000,000	5,925,000,000	11,250,000,000
Agrochemical products (g)	each	26,800	38,300	65,100	10,000	268,000,000	383,000,000	651,000,000
Mechanisation (labour costs)	ha	131,500	191,500	323,000	50,000	6,575,000,000	9,575,000,000	16,150,000,000
Small machinery (c)	each	15	15	30	200,000,000	3,000,000,000	3,000,000,000	6,000,000,000
<b>3. Adding value</b>						<b>33,165,000,000</b>	<b>11,055,000,000</b>	<b>44,220,000,000</b>
Threshers (one/20 ha)	each	6,575	3,000	9,575	600,000	3,945,000,000	1,800,000,000	5,745,000,000
Small rice mill (from 5 t/hr)	each	2	3	5	150,000,000	300,000,000	450,000,000	750,000,000
Small rice mill (from 2.5 t/hr)	each	3	4	7	100,000,000	300,000,000	400,000,000	700,000,000
Dehuskers	each	200	100	300	5,000,000	1,000,000,000	500,000,000	1,500,000,000
Community rice parboiling centre	each	12	3	15	35,000,000	420,000,000	105,000,000	525,000,000
Threshing/drying areas (d)	each	600	600	1,200	5,000,000	3,000,000,000	3,000,000,000	6,000,000,000
Warehousing	each	600	600	1,200	20,000,000	12,000,000,000	12,000,000,000	24,000,000,000

Access roads 10,000,000 F/km x 500 km	km	200	300	500	10,000,000	2,000,000,000	3,000,000,000	5,000,000,000
<b>4. Capacity building</b>						<b>10,836,000,000</b>	<b>3,612,000,000</b>	<b>14,448,000,000</b>
<i>Infrastructure &amp; advisory support</i>						8,104,500,000	2,701,500,000	10,806,000,000
Soil preparation equipment	fixed					-	-	-
Research infrastructure and equipment	fixed					375,000,000	1,125,000,000	1,500,000,000
Professional training centre	fixed					1,250,000,000	3,750,000,000	5,000,000,000
Advisors' motorcycles	each	480	100	580	1,000,000	480,000,000	100,000,000	580,000,000
Motorcycle running costs	monthly	46,080	3,600	49,680	75,000	3,456,000,000	270,000,000	3,726,000,000
<i>Training</i>						<b>2,731,500,000</b>	<b>910,500,000</b>	<b>3,642,000,000</b>
Ongoing advisor training (e)	sessions	15	15	30	61,400,000	921,000,000	921,000,000	1,842,000,000
Farmer training (expenses)	sessions	1,000	500	1,500	200,000	200,000,000	100,000,000	300,000,000
Specialised training	fixed					750,000,000	250,000,000	1,000,000,000
Study tours	fixed					375,000,000	125,000,000	500,000,000
<b>Operations</b>								
Light vehicles	each			60	20,000,000	900,000,000	300,000,000	1,200,000,000
Trucks	each			10	60,000,000	450,000,000	150,000,000	600,000,000
Equipment and consumables	fixed					75,000,000	25,000,000	100,000,000
Salaries and payments	fixed					1,125,000,000	375,000,000	1,500,000,000
Fuel and oils	fixed					1,267,875,000	422,625,000	1,690,500,000
Maintenance and repairs	fixed					75,000,000	25,000,000	100,000,000
<b>6. NRDS governance</b>						<b>1,500,000,000</b>	<b>500,000,000</b>	<b>2,000,000,000</b>
Coordination	fixed					750,000,000	250,000,000	1,000,000,000
Monitoring and evaluation	fixed					375,000,000	125,000,000	500,000,000
Communication plan	fixed					375,000,000	125,000,000	500,000,000
<b>TOTAL NRDS COST</b>						<b>193,888,875,000</b>	<b>64,629,625,000</b>	<b>258,518,500,000</b>

a. 800 wells for the lowlands and one well/10 ha for strict rainfed on half of the expected land area

b. Total requirement=480,000 t; 1/10 production by pits; annual pit production = 5 t each over 4,800 pits

c. Tillage, cropping and harvest equipment (power tillers and accessories, other tools (leveling, weeding, harrowing/puddling, agrochemical treatment, harvest): only 30 provinces are involved

d. With local contributions because each threshing floor will cater for 100 ha

e. 600 extension agents + 38 research technicians

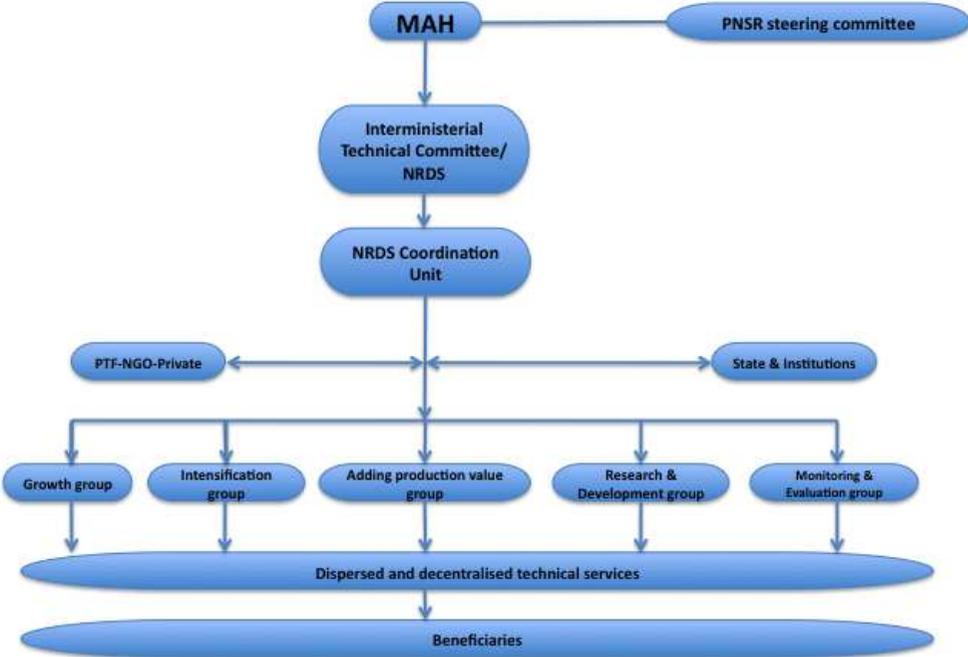
f. Development and/or introducing straw chopping equipment to produce organic matter (fixed at 50 units)

g. (71,500 ha+120,000 ha) x 10% x 100,000 F/l x 2 l/ha

h. Construction and equipment for Professional Training Centres. Matoukou Agricultural College has asked for 4.5 million FCFA to strengthen infrastructure and for equipment.

i. 63 000 ha/2 x 30 PVC/ha x 1000F/PVC

**Appendix 3: NRDS governance organisational chart**



#### Appendix 4: List of rice growing projects/programmes under way or starting in Burkina Faso

PTF	Project description	Cost (millions FCFA)	Length (yrs)	Start date	Extent	Funding	Other funders	Activities	Correlation with NRDS strategic directions
<i>WB</i>									
	National Programme for Soil Management (PNGTII)	44,000	5 yrs	Jan-07	Nationwide	Loan	FEM, State and recipient	Infrastructure development, management, legal framework for land	Increasing developed area Sustainable intensification of production
	Productivity and Food Security Improvement Project (PAPSA)	26,000	5 yrs	Jan-09	Nationwide	Loan	State & recipient	Production; market access and capacity building	Increasing developed area Adding value to production Sustainable intensification of production
	Agricultural Diversification and Business Development Project (PDADC)	33,000	5 yrs	Jan-08	Nationwide	Loan	State	Support for agricultural diversification, market access	Adding value to production Sustainable intensification of production
	Bagré Works Management	71,870	10 yrs	Jan-10	Centre, South central and East regions	Loan	Syngenta & State	Legal and regulatory framework, development, mechanization, processing and trade and infrastructure, capacity building	Increasing developed area Adding value to production Sustainable intensification of production
<i>EU</i>	Food facility	11,849	5 yrs	Jan-07	Nationwide	Grant		Lowland development Adding value to production Intensification and diversification	Increasing developed area Adding value to production Sustainable intensification of production

<i>ADB</i>	Small dams project/BAD	10,250	7 yrs	Jan-03	Centre, North and Plateau-Central regions	Loan	State	Capacity building Restoration of farm engineering structures and social infrastructure	Increasing developed area Sustainable intensification of production
	Rural Development Support Project/Gnagna Kouritenga (PADR-GK)	11,950	5 yrs	Jan-07	Gnagna and Kouritenga provinces	Loan	State	Capacity building Restoration of farm engineering structures and social infrastructure	Increasing developed area Sustainable intensification of production
	Local Development Support Project (PADL CLK)	16,810	7 yrs	Jan-03	Cascades region	Loan	State	Capacity building NRM Improving agricultural production systems	Sustainable intensification of production
<i>IFAD</i>	Sustainable Rural Development Project (PDRD)	21,680	9 yrs	Jan-05	Bam, Yatenga, Zandoma, Lorum provinces	Loan + donation + NB	FEM, WADB, OPEP, State	Capacity building Adding production value Access to funding and development planning	Increasing developed area Sustainable intensification of production
	Small-scale Water Management Project (PIGEPE)	151	7 yrs	Jan-08	South-west and Centre-south regions	Loan + donation + NB	OPEP, State	Lowland development Intensification Framework for concerted action	Increasing developed area Sustainable intensification of production
<i>WADB</i>	Soum Irrigation Development Project Phase 2 (PDH Soum)	15,860	5 yrs	Jan-09	Nationwide	Loan + NB	IDB, State	Studies and infrastructure	Increasing developed area Sustainable intensification of production
	Irrigation development project in the Liptako Gourma regions (PAHA/ALG III)	5,400	7 yrs	Jan-03	Nationwide	Loan + NB	State, Recipients	Water control Infrastructure Capacity building	Increasing developed area Sustainable intensification of production

<i>IDB</i>	Samendeni Valley integrated development project (PDIS)	60,800	6 yrs	Jan-07	Houet, Kenedougou, Tuy, Mohoun provinces	Loan NB	EBID FADB KFEAD ABEDA WADB OPEC State	Studies Planning Construction works Diversification	Increasing developed area Sustainable intensification of production
	Eastern small dams project	10,752	6 yrs	Jan-03	Gourma, Boulgou, Kouritenga provinces	Donation Loan NB	ABEDA State	Capacity building Planning Carrying out works and infrastructure	Increasing developed area Sustainable intensification of production
<i>FAO</i>									
	Food security project/Recovering degraded land	131	5 yrs	Jan-07	Bam, Lorum, Soum, Yatenga provinces	Loan NB	State	Capacity building Access to finance and lowland development planning Equipment	Increasing developed area Sustainable intensification of production
<i>Belgium</i>									
	OXFAM Belgium	152	6 yrs	Jan-08	Boucle du Mouhoun and Hauts basins regions	Donation + NB	State	Production intensification and diversification Equipment and capacity building	Increasing developed area Sustainable intensification of production Adding value to production
	Support project for irrigation development (PADI)	585	3 yrs	Jan-08	Nationwide	Donation	State	Capacity building	Sustainable intensification of production
<i>GIZ</i>									
	Agriculture development project (PDA GIZ)	3,640	9 yrs	Jan-04	East, East Central, South West and West Central regions	Donation + NB	State	Legal and regulatory framework Marketing and production	Adding value to production Sustainable intensification of production
	Project to develop the use of	1,300	9 yrs	Jan-	Plateau Central,	Donation +	State	Technical support for seed	Sustainable

<i>Japan</i>	improved seed in Burkina (PDSA)			03	Hauts bassins, Sahel, East Central, Cascades, East and North regions	NB		production, organizing producers and capacity building	intensification of production
	Capacity building project for the regions with special emphasis on lowlands and/or irrigable areas	1,606	6 yrs	Jan-06	West Central, East, South Central regions	Donation + NB	State	Production intensification and diversification, organizing producers and capacity building	Increasing developed area Adding value to production Sustainable intensification of production
<i>Taiwan</i>									
	Rainfed rice project II (PRP Phase II)	11,320	5 yrs	Jan-09	Nationwide	Donation + NB	State	Increasing production Adding value Diversification Producer organization Capacity building	Increasing developed area Adding value to production Sustainable intensification of production
<i>India</i>									
	Farm mechanization development project (PDMA)	16,500	5 yrs	Jan-07	Nationwide	Donation + NB	State	Development Research Technology transfer Capacity building Equipment	Research-extension Sustainable intensification of production
<i>KFEAD</i>									
	Small-scale irrigation project extension	7,600	12 yrs	Jan-04	Nationwide	Donation + NB	WFP IFAD State	Study Planning Equipment Capacity building NRM	Increasing developed area Sustainable intensification of production
<i>KfW</i>									
	South-west lowland development project	3,900	4 yrs	Jan-09	South West region and Sissili	Loan + NB	State	Lowland development Capacity building Building storage infrastructure	Increasing developed area Adding value to production

								Rural access	Sustainable intensification of production
<i>Spain</i>	Agricultural intensification through water control project	1,411	4 yrs	Jan-07	South central and West Central regions	Donation Technical assistance	State	Lowland development Capacity building Install irrigation infrastructure	Increasing developed area Sustainable intensification of production
<i>Syngenta</i>	Research capacity building and Rainfed rice promotion support project	1,110	3 yrs	Jan-10	Nationwide	Donation + NB	State	Increasing production Adding value Research support Producer organization Capacity building	Increasing developed area Adding value to production Sustainable intensification of production Research-extension
<i>MCA-ADP</i>	Sourou Valley Development Authority	42,900	10 yrs	Jan-08	Boucle du Mouhoun region	Donation Loan NB	FAO JICA State PAHD	Legal and regulatory framework Planning Mechanisation Processing and marketing Infrastructure	Increasing developed area Adding value to production Sustainable intensification of production

## Appendix 5: Project matrix and any gaps by area of activity

	Policy/ Institutional	Infrastructure	Human resources	Funding/ Support	Information/ Knowledge
1. Seed	- seed policy - seed standards policy - seed multiplication/delivery mechanisms	- Breeding infrastructure - Seed multiplication infrastructure	- Researchers (breeders) - Technicians (multiplication) - Implementation of quality standards (public)	- Public sector grants	- Extension of research results for seed etc.
2. Fertiliser	- Fertiliser policy - Law/standards for fertilizers - Fertiliser supply mechanism	- Production infrastructure	- Implementation of quality standards (public)	- Public sector grants	- Extension of results from fertilizer research etc.
3. Irrigation/ water management	- Groups (water users' association)	- Full water control irrigation infrastructure - Rainfed lowland infrastructure	- Producers (field management of water) - Community management of water resources	- Technical services (generally not budgeted)	- Extension of results of research on small-scale irrigation
4. Technology diffusion to farms (R & E)	- Research and extension policy	- Research and extension infrastructure	- Scientists/ technicians - Extension personnel - Producers/producer associations	- Technical services (generally not budgeted)	- Extension of results of research on technology packages for field use
5. Mechanisation	- Mechanisation policy (subsidies)	- Agricultural equipment made available			- Extension of post-harvest mechanization test results
6. Quality improvement	- Quality improvement policy - Quality standards	- Processing and quality conditioning - Quality retention (stores)	- Processing/conditioning specialists		- Extension of results from processing and conditioning mechanization testing
7. Market access		- Storage/roads - Access for traders and consumers			
9. General policy instruments	National strategy				- Develop a communication policy for the NRDS
10. Monitoring & evaluation					- Market evaluation of rice project achievements

Caption: Green cells indicate a shortfall (the NRDS requirements are not fully covered by the support from projects and programmes).  
Yellow cells indicate zero funding (no project or programme has pledged funds).

## Appendix 6: Risks and mitigation measures

Project	NRDS	Work item			Code:					
Identification of risk	Human, financial and equipment resources availability on time and in quantity			Date:						
Risk ownership:			Weight	Impact:	Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
Should the human and equipment resources not be available on time, there is a risk of target dates not being met with consequent loss of commitment from the target population.			0.30	Objectives		x				
			0.20	Quality		x				
			0.20	Cost					x	
			0.20	Schedule						x
			0.10	Organisation						x
			Stakeholders		1. NRDS					
Risk indicators:		2. MID			3. Beneficiaries					
		3. Private sector			5. Territorial communities					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	Impact					
Premises and office equipment for NRDS governance	NRDS	Start	5	Probability	1	2	3	4	5	
Raise maximum public awareness during the first year	NRDS	Duration	Cf. Communication plan	Very high						
				High						
				Average			x			
				Weak						
				Very weak						
					Risk priority					

Project	NRDS	Work item			Code:					
Identification of risk	Failing to observe normal technical standards for carrying out works and/or developments			Date:	30/09/2011					
Risk ownership:		Weight	Impact:		Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
Inexperienced contractors with poor equipment and lacking in quality control resulting in low quality works that impact on the NRDS objectives		0.40	Objectives					x		
		0.10	Quality				x			
		0.20	Cost					x		
		0.20	Schedule					x		
		0.10	Organisation		x					
		Stakeholders			1.					
Risk indicators:		2.			3.					
		3.			5.					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	<b>3.6</b>	Impact				
Recruit a specialist external works management company	NRDS		25	Probability	1	2	3	4	5	
Train technical officers	NRDS	Duration	1000	Very high						
				High						
				Average				x		
				Weak						
				Very weak						
				Risk priority						

Project	NRDS	Work item		Code:					
Identification of risk	Financial instability (exchange rates)		Date:	30/09/2011					
Risk ownership:		Weight	Impact:	Weak > Strong					
Risk description (causes and consequences):				1	2	3	4	5	
Allocated funds depreciate because of changes in exchange rates		0.20	Objectives			x			
		0.20	Quality	x					
		0.20	Cost			x			
		0.20	Schedule	x					
		0.20	Organisation	x					
		Stakeholders			1.				
Risk indicators:		2.		3.					
		4.		5.					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk <b>1.8</b>	Impact				
Negotiate the project funding in FCFA or in units of account	MEF/State	Duration		Probability	1	2	3	4	5
				Very high					
				High					
				Average					
				Weak		x			
				Very weak					
				Risk priority					

Project	NRDS	Work item			Code:				
Identification of risk	Weak access to credit			Date:	30/09/2011				
Risk ownership:		Weight	Impact:		Weak > Strong				
Risk description (causes and consequences):					1	2	3	4	5
Poor access to credit leads to low private sector involvement in the rice chain. This results in low take-up of mechanization, processing and marketing, with knock-on effects for non-set-up of fertilizer plants and equipment workshops.		0.20	Objectives				x		
		0.20	Quality			x			
		0.20	Cost		x				
		0.20	Schedule				x		
		0.20	Organisation		x				
Risk indicators:		Stakeholders			1. NRDS				
		2. Financial institutions			3. Private sector				
		4.			5.				
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	2.0	Impact			
Make a line of credit available	NRDS	Duration	2000	Probability	1	2	3	4	5
				Very high	Yellow	Yellow	Orange	Red	Red
				High	Yellow	X	Yellow	Orange	Red
				Average	Light Green	Yellow	Yellow	Orange	Red
				Weak	Dark Green	Light Green	Yellow	Yellow	Yellow
				Very weak	Dark Green	Dark Green	Light Green	Yellow	Yellow
Risk priority									

Project	NRDS	Work item			Code:					
Identification of risk	Land tenure security			Date:	30/09/2011					
Risk ownership:		Weight	Impact:		Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
Failure to implement the legislation on land tenure discourages professionalization of rice producers, resulting in insecurity of tenure with related low investment in rice production intensification.		0.40	Objectives					x		
		0.10	Quality			x				
		0.20	Cost			x				
		0.20	Schedule			x				
		0.10	Organisation		x					
		Stakeholders			1. NRDS					
Risk indicators:			2. Territorial communities		3. Traditional chiefs					
			4. Estates		5.					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	2.7	Impact				
Raise awareness of the law and codes applying to rural land tenure	DGFO MR/MAH	Duration		Probability		1	2	3	4	5
*Monitor the law's implementation			Very high							
*Carry out pre-development socio-economic surveys	NRDS		High							
			Average							
			Weak			x				
		Very weak								
				Risk priority						

Project	NRDS	Work item			Code:				
Identification of risk	Weak stakeholder commitment			Date:	30/09/2011				
Risk ownership:		Weight	Impact:		Weak > Strong				
Risk description (causes and consequences):					1	2	3	4	5
Weak stakeholder commitment to the NRDS objectives and strategies will result in poor efficacy and efficiency of NRDS implementation		0.30	Objectives						x
		0.20	Quality					x	
		0.20	Cost			x			
		0.20	Schedule					x	
		0.10	Organisation		x				
		Stakeholders			1. NRDS				
Risk indicators:		2. Territorial communities			3. Decentralised and dispersed technical services				
		4. Beneficiaries			5.				
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	3.6	Impact			
Lead awareness campaigns	NRDS	Duration	500	Probability	1	2	3	4	5
				Very high	Yellow	Yellow	Orange	Red	Red
				High	Yellow	Yellow	Orange	Red	Red
				Average	Light Green	Yellow	Yellow	Orange	Orange
				Weak	Dark Green	Light Green	Yellow	x	Yellow
				Very weak	Dark Green	Dark Green	Light Green	Yellow	Yellow
					Risk priority				

Project	NRDS	Work item		Code:						
Identification of risk	Low level of gender awareness throughout the rice value chain		Date:	30/09/2011						
Risk ownership:		Weight	Impact:		Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
Because of the strong involvement of women and youths in rice growing, their low level of participation in implementing the NRDS will result in low uptake of certain aspects in the value chain, particularly post-harvest and parboiling activities		0.30	Objectives			x				
		0.20	Quality		x					
		0.20	Cost	x						
		0.20	Schedule		x					
		0.10	Organisation	x						
			Stakeholders							1. NRDS
Risk indicators:		2. Women		3.						
		3.		5.						
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	2.0	Impact				
Discriminate in favour of women in the communication programme	NRDS	Duration	Cf. Communication plan	Probability		1	2	3	4	5
				Very high						
				High						
				Average						
				Weak		x				
				Very weak						
					Risk priority					

Project	NRDS	Work item			Code:				
Identification of risk	Diverse approaches to partner projects and programmes			Date:	30/09/2011				
Risk ownership:		Weight	Impact:		Weak > Strong				
Risk description (causes and consequences):					1	2	3	4	5
Carrying out partner projects and programmes could be delayed and funding swallowed up by diversity in their approaches		0.30	Objectives				x		
		0.20	Quality				x		
		0.20	Cost		x				
		0.20	Schedule						x
		0.10	Organisation		x				
		Stakeholders			1. NRDS				
Risk indicators:		2. MEF			3. PTF				
		4.			5.				
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	2.8	Impact			
*Discussion on harmonization by the Inter-ministerial Committee	MEF/PNSR pilot committee	Duration	10	Probability	1	2	3	4	5
*Introduce agreed common steps into the MoU	NRDS	Duration		Very high					
				High					
				Average			x		
				Weak					
				Very weak					
					Risk priority				

Project	NRDS	Work item			Code:				
Identification of risk	Failure to take steps to mitigate environmental effects			Date:	30/09/2011				
Risk ownership:		Weight	Impact:		Weak > Strong				
Risk description (causes and consequences):					1	2	3	4	5
Within the context of climate change, it is absolutely necessary to safeguard the environment at all times to guarantee sustainable sector development. Without this, it will not be possible to undertake all NRDS activities in the set time.		0.30	Objectives					x	
		0.20	Quality			x			
		0.20	Cost					x	
		0.20	Schedule				x		
		0.10	Organisation		x				
Risk indicators:		2. MEDD			3. Beneficiaries				
		4. Private sector			5. Territorial communities				
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	<b>3.3</b>	Impact			
NRDS environmental impact studies before implementation	NRDS	Start	50	Probability	1	2	3	4	5
Develop and implement a social and environmental management plan	NRDS	Duration	50	Very high					
				High					
				Average			x		
				Weak					
				Very weak					
					Risk priority				

Project	NRDS	Work item			Code:					
Identification of risk	Difficulties in providing inputs and distribution of production			Date:	30/09/2011					
Risk ownership:		Weight	Impact:		Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
The development of access routes to the major rice-growing areas is essential for supplying inputs and distributing production. Such difficult access to the production areas will impact negatively on achieving the NRDS objectives		0.30	Objectives					x		
		0.20	Quality		x					
		0.20	Cost					x		
		0.20	Schedule					x		
		0.10	Organisation	x						
		Stakeholders			1. NRDS					
Risk indicators:		2. MID			3. Beneficiaries					
		4. Private sector			5. Territorial communities					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	<b>3.3</b>	Impact				
Create access tracks for production sites	NRDS	Start	5000	Probability		1	2	3	4	5
Create access routes to the sites	NRDS	Duration	100	Very high						
				High						
				Average			x			
				Weak						
				Very weak						
				Risk priority						

Project	NRDS	Work item			Code:					
Identification of risk	Variable rainfall because of climate change			Date:	30/09/2011					
Risk ownership:		Weight	Impact:		Weak > Strong					
Risk description (causes and consequences):					1	2	3	4	5	
Rainfall variability could give rise to two effects: smothering of crops by flooding or water stress. This would immediately reduce yield and income, and maintain or increase poverty in the long term		0.40	Objectives						x	
		0.10	Quality			x				
		0.30	Cost					x		
		0.10	Schedule					x		
		0.10	Organisation					x		
			Stakeholders							1.
Risk indicators:		2.			3.					
		4.			5.					
Mitigation strategy	Responsible	Frequency	Cost (millions)	Risk	4.2	Impact				
Develop supplementary irrigation (wells, ponds, drains)	NRDS	Duration	13,900	Probability		1	2	3	4	5
Develop adapted varieties	INERA /NRDS	Duration	975	Very high						
Apply integrated soil fertility management (CES/DRS)	NRDS	Duration	5000	High				x		
				Average						
				Weak						
				Very weak						
Risk priority										

## **Appendix 7: TASK FORCE Team members**

MINISTRY OF AGRICULTURE,  
IRRIGATION AND FISHERIES

GENERAL SECRETARIAT

BURKINA FASO

Unity – Progress – Justice

Ougadougou, 25 January 2010

No.2010/00029 /MAHRH/SG/DGPER

# **MEMORANDUM**

on the appointment of team members for the TASK FORCE  
to pilot preparation of the National Rice Development  
Strategy (NRDS) for Burkina Faso

Pending an official letter to other departments involved in setting up the team, the following people have been appointed to the TASK FORCE team to pilot preparation of the National Rice Development Strategy (NRDS) for Burkina Faso. They are:

- 1) Mr Youssouf OUTTARA, Rainfed Rice Project Coordinator, Focal Point;
- 2) Dr Lamoussa Mathias ZIGANI, Director of the Agricultural Produce Markets Organisation, Focal Point;
- 3) Mr Houhanri SOGUIRI, Head, Rainfed Rice Project Capacity Building Service;
- 4) Mr Alain COMPAORE, Ex-Coordinator, Rice Sector Action Plan;
- 5) Dr Issouf DEMBELE, Officer in charge, Irrigation and Water Management Section of the Rice Programme (INERA);
- 6) Dr Zakarie SEGDA, Director General, Bagré Contracting Authority (MOB);
- 7) Mr Alphonse OUEDRAGOGO, Director General, Sourou Valley Development Authority (AMVS);
- 8) Mr Bouma THIO, Director of Extension, Research and Development (DVRD);
- 9) Mr Etienne KABORE, Director of Inputs and Agricultural Mechanisation (DIMA);

- 10) Mr S. Oumar TRAORE, Director of Irrigation Planning and Development (DADD);
- 11) Mr Remy PALE, Economist, Agricultural and Food Statistics and Forecasting Directorate;
- 12) Mr Somanogdo YERBANGA, Director of Internal Trade, MCPEA;
- 13) Madame Nathalie SANDWIDI, Technical Unit Coordinator, National Microfinance Strategy Action Plan;
- 14) Dr Gouyali SON, Head, Mechanisation Department at FIRSAT;
- 15) Mr Oumarou KY, Quality Inspector, Economic Affairs General Inspectorate (IGAE), Ministry of Trade;
- 16) Mr Sy Eric SANOU, Head, Micro-project Division, Executive Secretariat, National Council for Food Security (SE/CNSA);
- 17) Mr V. Mohamed OUEDRAOGO, FJA Advisor, Directorate General of Land and Rural Organization (DGFOMR)
- 18) Mr Mamadou Djakite, Director General, DANDIA Rice Mill, Processor;
- 19) Mr Lancina BERTHE, Chairman, Burkina Interprofessional Rice Committee;
- 20) Mr Abdoulaye OUEDRAOGO, Research Officer, Permanent Secretariat, Agricultural Policy Coordination Unit;
- 21) Mr Adama KABORE, Programme and Project Monitoring Officer, Study and Planning Directorate (DEP), MAHRH;
- 22) Mr Jean Pierre YAMEOGO, Rice Trader, Vice-chairman of the CIR-B;
- 23) Mr Johany KONTITAMDE, Agricultural Inputs Importer and Distributor.

The current list comprises twenty-three (23) names.

Adama COMPAORE  
Knight of the National Order