



Food and Agriculture  
Organization of the United  
Nations



Investment Plan for the development  
of the rice value chain

Investment Forum | Rome, Italy | 16 - 20 October 2023

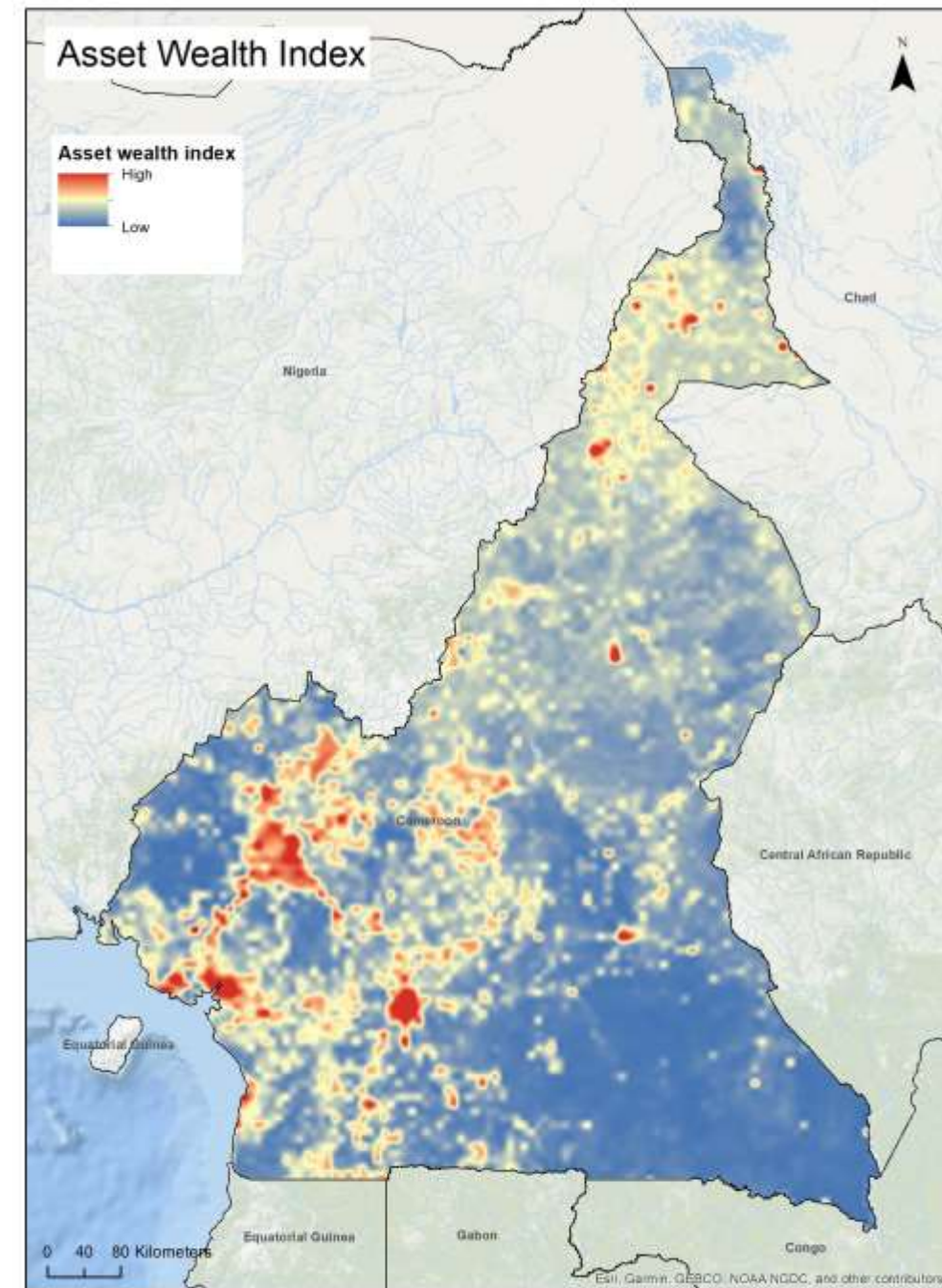
## Cameroon: Context (1/2)

### Population (BUCREP)

- Population: 24,348,251 in 2019
- Young people under 15: 43.6%
- Activity rate: 76.2%
- Rural population : 43.7%
- Average age: 19 years old
- Natural growth rate: 2.6%

### Economy and society

- Projected GDP growth rate in 2023: 4.3% (MINEPAT)
- Inflation rate in 2022: 2.3% (MINEPAT)
- GDP in 2022: USD 44.34 billion (World Bank)
- Main exports (2022) :  
Oil, gas, aluminium, timber, cocoa, coffee, tea, rubber,  
banana, (MINEPAT)

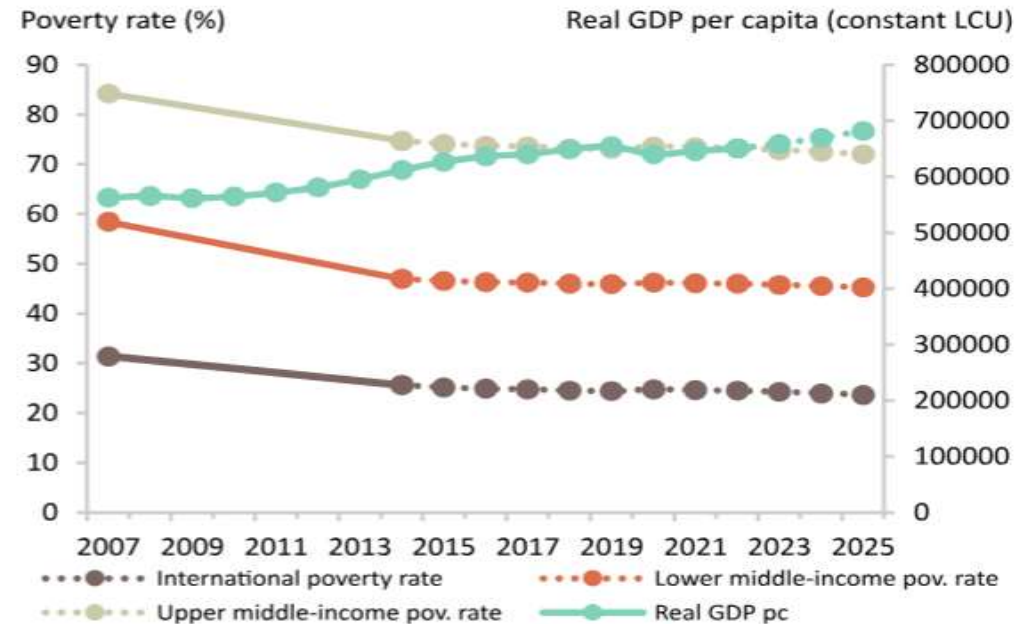




## Cameroon: Context (2/2)

- Human Capital Development Index (HCI) in 2020: 3.9, ranked 151<sup>st</sup> out of 191 countries (World Bank)
- Poverty rate in 2022: 37.5% (World Bank)
- Acutely food-insecure population (phases 3 and 4 of the Harmonised Framework): 3.01 million people in March 2023 (MINADER)

Cameroon / Actual and projected poverty rates and real GDP per capita



Source: World Bank.

## Rice subsector objectives and challenges (1/2)

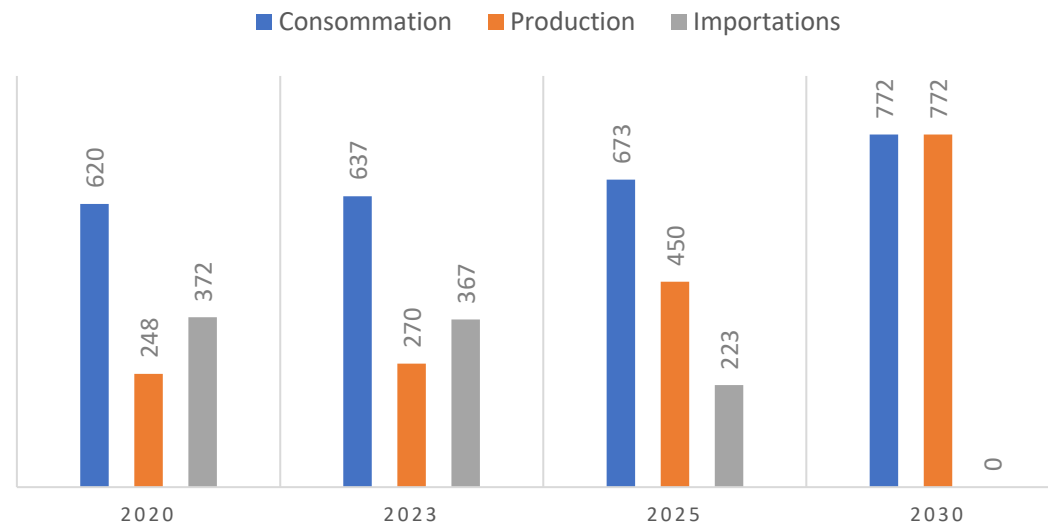
Contribute to the implementation of the national rice strategy updated in May 2023

Each Cameroonian consumes an average of 25 kg of milled rice per year.

**In 2030 :**

- Cameroon domestic rice consumption needs will amount to 772,000T
- Current investments will help cover 450,000 tonnes
- **The investment plan aims to produce 322,000 T and**
- Drop the proportion of imported rice from 75% to 0%

COMPARATIVE TRENDS OF MILLED RICE CONSUMPTION AND PRODUCTION IN CAMEROON BETWEEN 2020 AND 2030 (IN THOUSANDS OF METRIC TONNES)



### Challenges of the sector strategy

- Improving rural incomes
- Reducing rural poverty
- Creating decent jobs
- Promoting gender equity and food and nutrition security
- Boosting the local economy

## Why invest in Cameroon's rice value chain? (1/2)

### High farming potential

- 5 Agroecological Zones
- Arable land: 7.16 million ha
- Irrigable land: 2,809,800 ha
- Occupancy rate of irrigable land: 10%.
- Extensive agricultural research ecosystem
- Rainfall: 400 mm/year - 4,000 mm/year
- Floodplains and swampy areas: 3.4 million ha
- Groundwater reserves: 120 billion m<sup>3</sup>
- Inland waters: 4 million ha
- 400 km of coastline



## Why invest in Cameroon's rice value chain? (2/2)

### Incentive taxation

- Corporate tax cuts, ranging from 25% to 75%, depending on the amount invested;
- Accelerated depreciation of fixed assets;
- Customs duty exemptions or reduced rate (5%) on imports of inputs, equipment and production materials
- Exemption from VAT on the purchase of pesticides, fertilisers and inputs, as well as equipment
- Exemption from tax and employers' contributions on salaries paid to seasonal agricultural workers
- Exemption from registration fees on deeds and agreements
- Property tax relief on company-owned properties

# Hand in Hand in Cameroon

## Rice value chain objectives and challenges

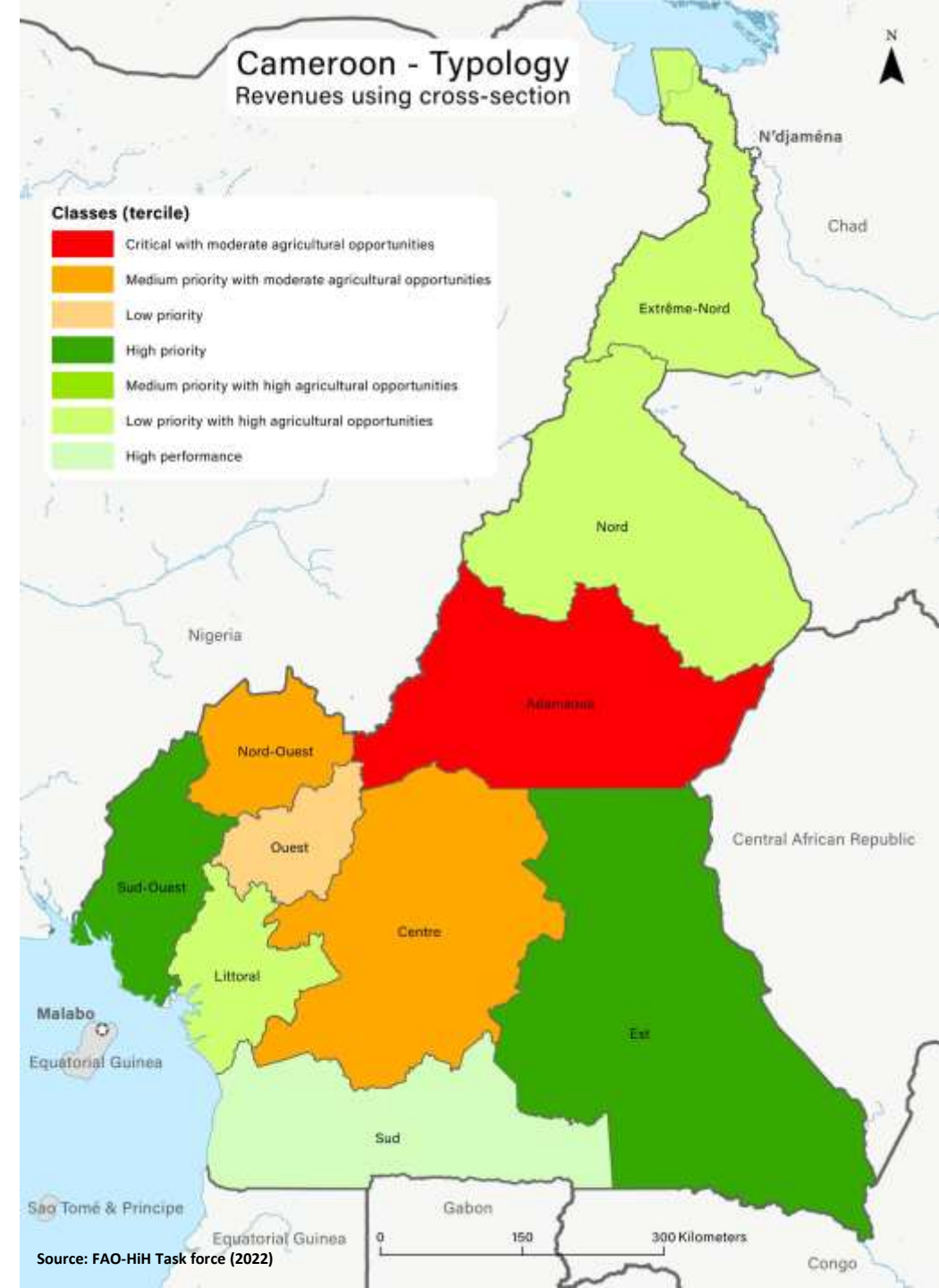
### Objectives

- Help close the gap of 322,000 tonnes between production and consumption of milled rice
- Contribute to improving the balance of trade
- Increase people's incomes without leaving anyone behind
- Reduce poverty, malnutrition and underemployment, while optimising carbon impacts
- Strengthen food and nutrition security
- Create decent jobs
- Promote gender equity

### Intervention areas

Priority areas were targeted based on the MCDA used in the Hand in Hand initiative (efficiency, potential, poverty). It was refined by the Government in the light of:

- Updated and disaggregated data on poverty and food security
- Priority value chains
- Other strategic data (secure land areas, security, social aspects)





## Stakeholders and programmes

### Rice production companies and ongoing programmes

- Yagoua Rice Expansion and Modernisation Company (SEMRY) in the Far North and North Regions (99 years, USD 22.7 million in equity)
- Upper Nun Valley Development Authority (UNVDA) in the North-West and West Regions (99 years, USD 7.7 million equity)
- Avangane Irrigated Rice Pilot Farm (FPRIA-C) in the Centre Region (5 years, USD 2.4 million)
- Commodity Value Chain Development Support Project (PADFA II), in the West, North-West, North and Far-North Regions (5 years, USD 34.5 million)
- Irrigated and Rainfed Rice Development Project (PRODERIP) in the Centre, South, East, North-West and West Regions (5 years, USD 7.1 million)
- The Chari-Logone Integrated Rural Development Project (PDRI-CL) in the Far-North Region (5 years, USD 16.8 million)

- Programmes currently starting
- Rice value chain development project responsible for the modernisation in the North-West, West and Far-North Regions (5 years, USD 87.5 million)
- Benoue Valley Investment Development and Enhancement Project (Viva Bénoué) in the North Region (5 years, USD 218.6 million);
- The Logone Valley Investment Development and Enhancement Project (VIVA-LOGONE) in the Far-North Region (5 years, USD 218.6 million)
- Agricultural Infrastructure and Value Chain Development Project in the South-West Region (5 years, USD 22.7 million)
- Project to develop 10, 000 ha of irrigated areas in Logone Birni
- Project to develop 6,000 ha of land in the locality of Zina



# Irrigated rice (largescale producers)

**Production of 175,500 tonnes of milled rice from average areas of 5,000 ha irrigated perimeters**

Hydro-agricultural development of vast irrigated perimeters

Procurement of key inputs: seeds, fertilisers, pesticides

Extension of improved production techniques; Managerial and commercial support

Use of agricultural machinery in production  
Industrialised husking of paddy rice

Construction and equipment of paddy and milled rice storage warehouses/silos

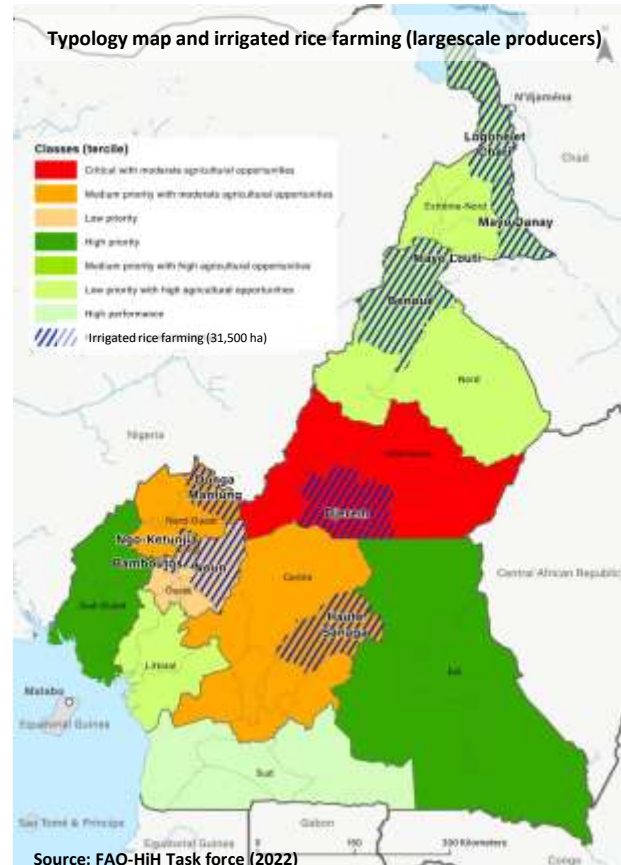
Opening of rural roads and electrification of producer villages

## Key information for investors

- Agreement on land secured by the State
- Staff recruitment and training
- Identification of input supply network
- Contractual arrangement with the actors of product marketing channels

## Justification

- Highest productivity despite negative environmental impacts
- Land available and directly accessible
- Existing local experience



## Summary data

Investment required: USD 505.8 million

Areas to be created: 25,000 hectares

Target yields: 6 tonnes/hectare

Two (02) seasons per year

NPV (14, 32%): USD 93.7 million

IRR: 37.44

B/C ratio: 1.27

Payback period : 4.5 years

Direct beneficiaries: 25,000

Indirect beneficiaries: 150,000

Additional income: USD 712.27/beneficiary/year

**State contribution (planned): USD 114.8 million**

100% Construction and maintenance of roads, electrification of producers' villages, tax and customs incentives on heavy equipment and hydro-agricultural developments, provision of land under concessions

**Private funding (to be mobilised): USD 391 million**

100% construction of warehouses/silos and husking units; labour force, seeds, pesticides, tools, packaging, land lease, 70% hydro-agricultural developments, 60% procurement of heavy agricultural equipment

## Challenges

- Modernisation of the means of production
- Improvement of the rural living environment
- Processing of agricultural products

# Irrigated rice (small-scale producers)

**Production of 31 960 tonnes  
of milled rice from average  
areas of 1,5 ha irrigated  
perimeters**

Hydro-agricultural  
development of small  
irrigated perimeters

Provision of key inputs:  
seeds, fertilisers,  
pesticides

Extension of improved  
production techniques  
Structuring and providing  
support for producer  
organisations

Mechanised ploughing,  
sowing and threshing;  
Semi-industrialised  
husking of paddy rice

Construction of paddy and  
milled rice storage  
warehouses/silos

Opening of rural roads  
and electrification of  
producer villages

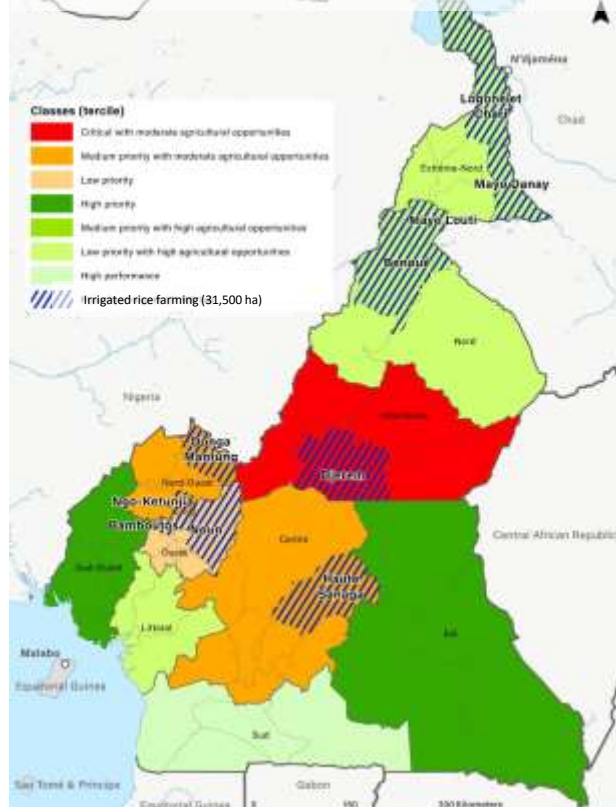
## Key points for investors

- Contractual collaboration with small-scale producers
- Organisation of the input supply chain
- Product marketing Facilitation

## Justification

- 80% of farmers are small-scale producers
- Land available and directly accessible
- Local experience
- Significant impact on food security

Typology map and irrigated rice farming (small-scale producers)



Source: FAO-HiH Task force (2022)

## Summary data

Investment required: USD 117.8 million

Area to be created: 5,170 hectares

Target yields: 6 tonnes/hectare

Two (02) production seasons per year

**NPV** (14.32%): USD 29.2 million

IRR: 44.08

B/C ratio: 1.39

Payback period : 3.5 years

Direct beneficiaries: 3447

Indirect beneficiaries: 20,680

Additional income: USD 1006.56/beneficiary/year

**State contribution (planned): USD 63.8 million**

100% Construction and maintenance of roads, electrification of producers' villages, 90% subsidy for hydro-agricultural schemes  
Provision of land under concession

**Private funding (to be mobilised): USD 54.0 million**

100% Construction of warehouses/silos and setting up husking units, labour force, seeds, pesticides, tools, packaging, land lease, etc.;

10% of hydro-agricultural developments;

## challenges

- Modernisation of the means of production
- Improvement of the rural living environment
- Processing of agricultural products

# Lowland rice (small-scale producers)

**Production of 15 795 tonnes  
of milled rice from average  
areas of 1.5 ha lowlands**

Hydro-agricultural  
development of flood  
lowlands

Provision of key inputs:  
seeds, fertilisers,  
pesticides

Extension of improved  
production techniques  
Structuring and providing  
support for producer  
organisations

Mechanised  
ploughing, sowing and  
threshing;  
Mechanised husking of  
paddy rice

Construction of paddy and  
milled rice storage  
warehouses/silos

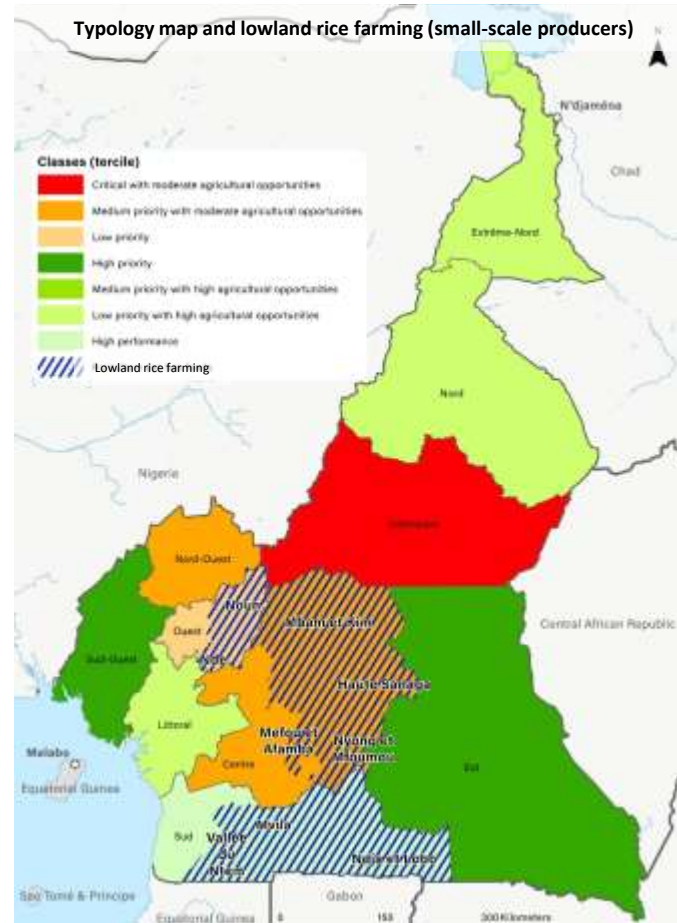
Opening of rural roads  
and electrification of  
producer villages

## Key points for investors

- Contractual collaboration with small-scale producers
- Organisation of the input supply chain
- Product marketing Facilitation

## Justification

- 80% of farmers are small-scale producers
- Land available and directly accessible
- Well established local experience



## Summary data

Investment required: USD 32.8 million

Areas to be created: 3,000

Target yields: 4.5 tonnes/hectare

Two production seasons per year

NPV (14.32%): USD 5.2 million

IRR: 26.7

B/C ratio: 1.10

Payback period: 3.5 years

Direct beneficiaries: 2,000

Indirect beneficiaries: 12,000

Additional income: USD 761.18/beneficiary/year

**State funding (planned): USD 5.9 million**

100% Creation and maintenance of roads, electrification of producer villages,

30% agricultural developments and 20% construction of warehouses/silos; provision of land under concession

**Private funding (to be raised): USD 26.9 million**

100% and procurement of agricultural equipment, workforce, seeds, pesticides, tools, packaging, land lease; 70% of agricultural developments, 80% of the construction of warehouses/silos

## Challenges

- Modernisation of the means of production
- Improvement of the rural living environment
- Processing of agricultural products



# Rainfed rice (small-scale producers)

**Production of 16,848 tonnes of milled rice from average areas of 1.5 ha rainfed farms**

Development of farms in the savannah

Provision of key inputs: seeds, fertilisers, pesticides

Extension of improved production techniques  
Structuring and providing support for producer organisations

Mechanisation of production  
Mechanised husking of paddy rice

Construction of paddy and milled rice storage warehouses/silos

Opening of rural roads and electrification of producer villages

## Key points for investors

- Contractual collaboration with small-scale producers
- Organisation of the input supply chain
- Product marketing Facilitation

## Justification

- 80% of farmers are small-scale producers
- Land available and directly accessible
- Current yields can be quickly improved

## Summary data

Investment required: USD 33.3 million

Areas to be created: 4,800 hectares

Targeted yields: 3 tonnes/hectare

Two (02) production seasons per year

NPV(14.32%): USD 3.2 million

IRR: 32.11%

B/C ratio: 1.05

Payback period: 3 years

Direct beneficiaries: 3,200

Indirect beneficiaries: 19,200

Additional income: USD 117.14/ben/year

**State funding (planned): USD 2.9 million**

100% Creation and maintenance of roads, electrification of producer villages, subsidy

20% agricultural developments, construction of husking units and warehouses/silos;

provision of land under concession

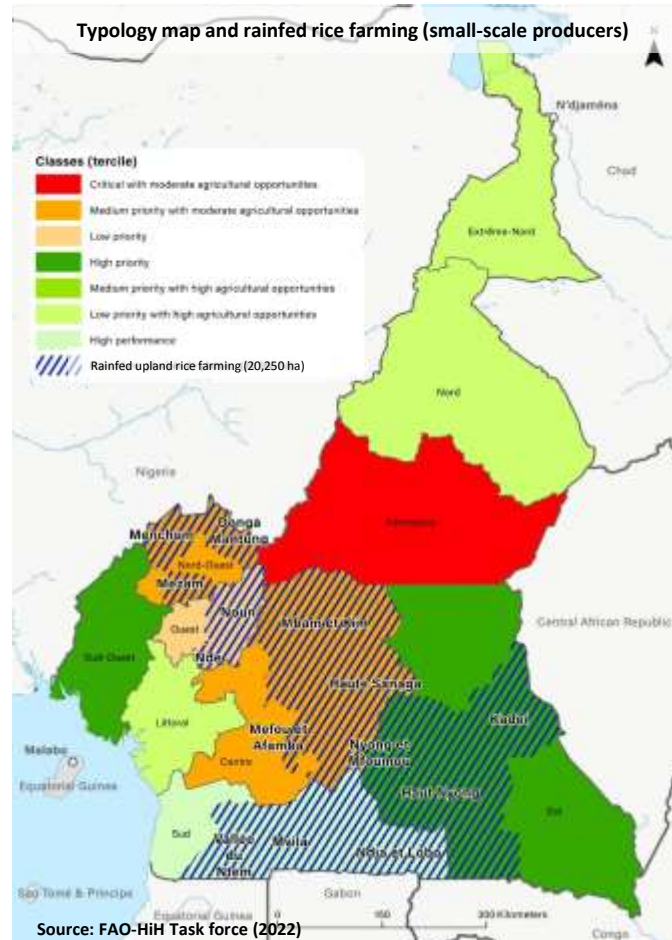
**Private Funding (to be mobilised): USD 30.4 million**

100% of labour force, seeds, pesticides, tools, packaging, land lease,

80% of agricultural developments, warehouses/silos and husking units

## Challenges

- Modernisation of the means of production
- Improvement of the rural living environment
- Processing of agricultural products



# Rainfed rice (largescale producers)

Production of **81,900 tonnes of milled rice** from average areas of **5,000 ha rainfed farms**

Development of farms in the savannah

Procurement of key inputs: seeds, fertilisers, pesticides

Extension of improved production techniques

Mechanisation of production

Managerial and commercial support

Semi industrialised husking of paddy rice

Construction of paddy and milled rice storage warehouses/silos

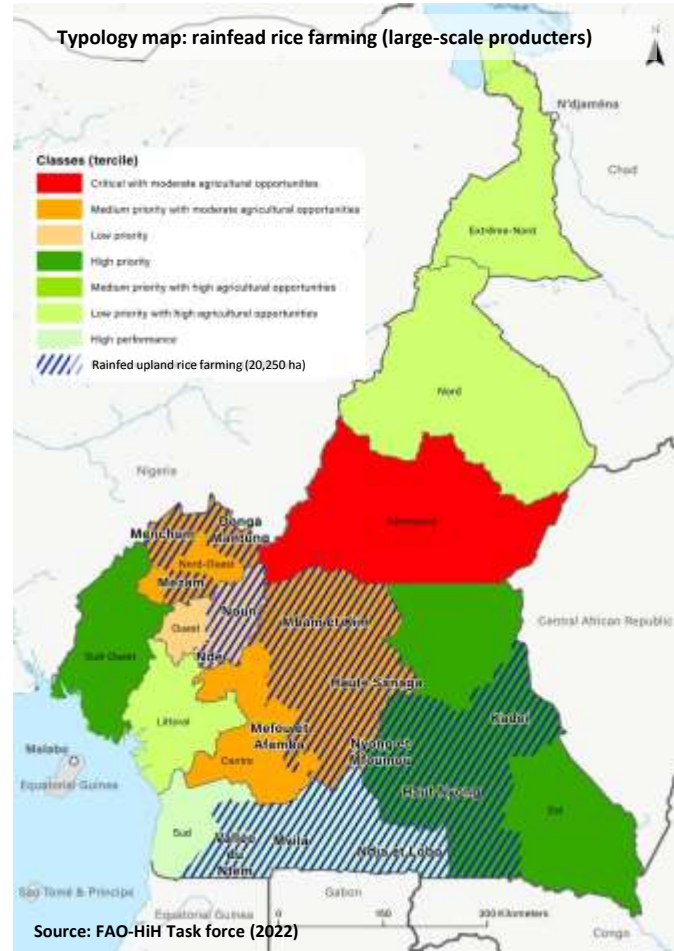
Opening of rural roads and electrification of producer villages

## Key points for investors

- State Secured Land Agreement
- Staff recruitment and training
- Identification of the input supply network
- Contractual arrangements with stakeholders in the product marketing channels

## Justification

- Proximity to major consumption centres
- Existence of relevant State secured land
- Current yields can be quickly improved



## Summary data

Investment required: USD 112.1 million

Areas to be created: 20,000 hectares

Targeted yields: 3.5 tonnes/hectare

02 production seasons per year

NPV(14.32%): USD 13.8 million

IRR: 35.76%

B/C ratio: 1.06

Payback period: 4.5 years

Direct beneficiaries: 20,000

Indirect beneficiaries: 120,000

Additional income: 259.36 USD/ben/year

**State funding (planned): 13.9 million USD**

Creation and maintenance of roads, electrification of production areas, tax and customs incentives for agricultural developments, procurement of heavy equipment, construction of warehouses/silos and establishment of husking units; Provision of land under concession

**Private funding (to be mobilised): USD 98.2 million**

100% labour force, seeds, pesticides, tools, packaging, land lease

60% construction of warehouses/silos, 70% of agricultural developments and heavy equipment; 80% of the cost of setting up husking units

## Challenges

- Conversion of some rice importers to producers
- Processing of agricultural products

# Rice-fish farming (small-scale producers)

**Simultaneous production of 26 tonnes of milled rice and 12 tonnes of fish from average areas of 1.5 ha pilot irrigated farms**

## Justification

- 80% of farmers are small producers
- Land available and directly mobilizable
- Fish is also a strategic ingredient consumed with rice.

## Summary data

Investment required: USD 270,063  
 Areas to be created: 10 hectares  
 Targeted yields: 4.5 tonnes/hectare  
 01 production season per year  
 NPV(14.32%): USD 8.2 million  
 IRR: 39.84%  
 B/C Ratio: 1.23  
 Payback period: 3.5 years  
 Direct beneficiaries : 07  
 Indirect beneficiaries : 42  
 Additionnel income: USD 947.56/beneficiaries/year

Hydro-agricultural development of small irrigated areas

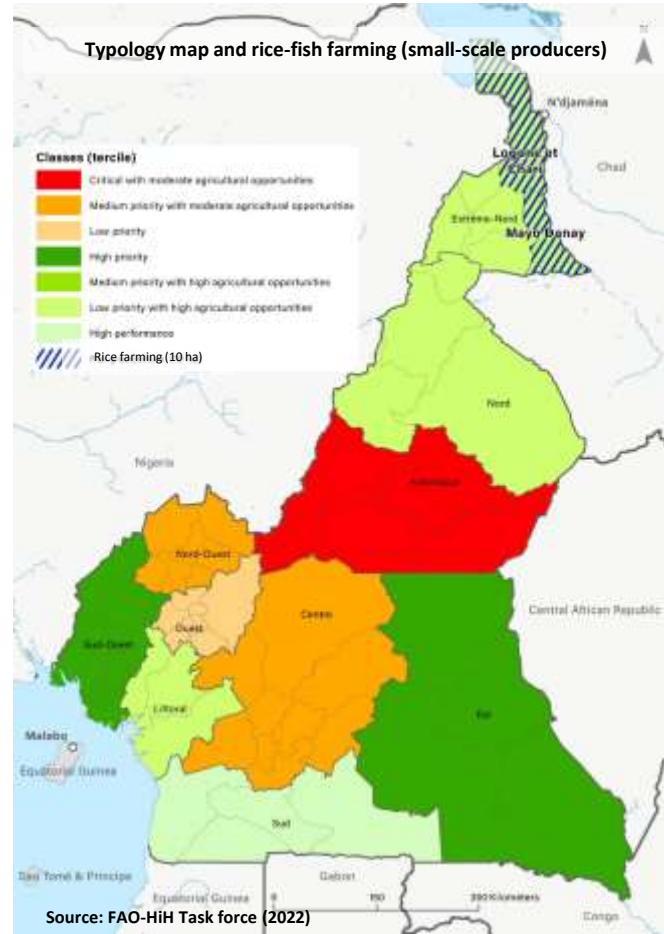
Provision of key inputs: seeds, fertilisers, fry, fish feed

Extension of improved production techniques and managerial support

Mechanisation of plowing  
 Semi-industrialised husking of paddy rice

## Key points for investors

- Contractual collaboration with small producers
- Organisation of the input supply chain
- Product marketing facilitation
- Access to credit for the financing of hydro-agricultural investments



**State contribution (planned): USD 40,356**  
 Provision of land under concession; 30% subsidy for developments  
**Private Financing (to be mobilised): USD 229,706**  
 70% of hydro-agricultural developments  
 100% procurement of agricultural equipment Labour force, seeds, pesticides, tools, packaging, land lease

## Challenges

- Modernisation of the means of production
- Improvement of the rural living environment
- Processing of agricultural products

## Smart development of the rice value chain in terms of climate and soil requirements

In the nationally determined contributions, the Government of Cameroon pledges to reduce emissions by 35% (by 2030)  
Cameroon has a national GHG inventory system which is a tool

- **Adoption of the intensive rice farming system:** innovative farming techniques
- **Rationalised water management**, to reduce the time of farm flooding such as Alternating wetting and drying (AWD), saving water (22-39%)<sup>1</sup>, and to break up the layer of stagnant water in rice farms to replenish oxygen and reduce bacteria
- **Use of bio-inputs** (organic fertilizers and natural pesticides)
- **Use of “cable” bacteria** capable of reducing methane emissions by more than 90%<sup>2</sup>
- **Urea coating with neem oil**
- **Recycling straw and rice husks into uses such as off-rice composting, mushroom production** (avoiding methane emissions, generating additional income)
- **Innovative use of husks and straw (energy production, livestock feed, natural fertiliser production, etc.)** will provide new local business opportunities and additional sources of income for farmers, while mitigating the effects of climate change.
- **Use of organic fertilisers and conservative farming techniques** to protect against rapid soil degradation
- **Use of seed varieties that are tolerant to environmental stresses** such as drought and flooding and resistant to current and future local climatic conditions, with the same production yield to help reduce water and fertiliser use
- **Mapping of flooding regime and measurement of nitrous oxide emissions** on various rice farms and reporting of such emissions and to optimise the use of nitrogen and organic matters to reduce emissions of these two important greenhouse gases

1) Wetting and Drying: Reducing Greenhouse Gas Emissions and Saving Water from Rice Production, World Research Institute December 2014

2) Cable bacteria reduce methane emissions from rice-vegetated soils, Vincent V. Scholz, Rainer U. Meckenstock, Lars Peter Nielsen & Nils Risgaard-Petersen

# Cameroon: Investment opportunities

## SUMMARY

**US\$ 802.2 million**  
Total cost

including: **US\$ 201.4m**  
State  
**US\$ 600.8m** Private

**37.46%**  
Average  
IRR

**53,653** direct beneficiaries  
**321,922** indirect beneficiaries

**US\$ 528.70**  
Average increase  
in income per beneficiary

**+10,926,207.6 t CO2 emitted**  
will be offset according to the nationally  
determined contribution

### IRRIGATED RICE FARMING

**1a: Small-scale producers**  
**1b: Large-scale producers**

1

#### Investment costs

**1a: USD 117.8 million**  
**1b: USD 505.8 million**

#### IRR (%)

**1a: 44.08%** **1b: 37.44%**

#### NPV (14.32%)

**1a: USD 29.2 million**  
**1b: 93,7 millions USD**

#### Payback period:

**1a: 3.5 years** **1b: 4.5 years**

#### Sustainability benefits

#### Beneficiaries:

**Direct: 1a: 3,447** **1b: 25,000**

**Indirect: 1a: 20 68** **1b: 150,000**

#### Additional income per beneficiary:

**1a: 1 006, 56 USD/ben/an**  
**1b: USD 712.27/ben/year**

**Carbon: + 7,952,411 tCO2 emitted**

### RAINFED RICE FARMING

**1a: Small-scale producers**  
**1b: Large-scale producers**

2

#### Investment costs

**1a: USD 33.3 million**  
**1b: USD 112.1 million**

#### IRR (%)

**1a: 32.11%** **1b: 35.3%**

#### NPV (14.32%)

**1a: USD 3.2 million**  
**1b: 13,6 millions USD**

#### Payback period:

**1a: 3 years** **1b: 4.5 years**

#### Sustainability benefits

#### Beneficiaries:

**Direct: 1a: 3,200** **1b: 20,000**

**Indirect: 1a: 19,200** **1b: 120,000**

#### Additional income per beneficiary:

**1a: USD 117.4/ben/year**  
**1b: USD 259.36/ben/year**

**Carbon: +2,835,438.6 t CO2 emitted**

### LOWLAND RICE FARMING

**Small-scale producers**

3

#### Investment costs

**1a: USD 32.8 million**

#### IRR (%)

**26.7%**

#### NPV (14.32%)

**USD 5.2 million**

#### Payback period:

**1a: 3.5 years**

#### Sustainability benefits

#### Beneficiaries:

**Direct: 2,000**

**Indirect: 12,000**

#### Additional income per beneficiary:

**USD 761.18/ben/year**

**Carbon: +146,157 t CO2 emitted**

### RICE-FISH FARMING

**Small-scale producers**

4

#### Investment costs

**USD 270,063**

#### IRR (%)

**39.84%**

#### NPV (14.32%)

**USD 63,101**

#### Payback period:

**1a: 3.5 years**

#### Sustainability benefits

#### Beneficiaries:

**Direct: 07**

**Indirect: 42**

#### Additional income per beneficiary:

**USD 947.56/ben/year**

**Carbon: - 5799 t CO2 emitted**