FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

FeSeRWAM.ORG & THE AIP: HOW TO ACCESS AND SELECT AGRICULTURAL INPUT PACKAGES

USER TRAINING MODULE




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IFDC Developing Agriculture from the Ground Up

ACKNOWLEDGEMENTS

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For this exercise to be successful, EnGRAIS and PAIRED teams adopted a participatory and inclusive approach, involving stakeholders from almost all ECOWAS countries, as well as Chad and Mauritania. Participants involved were representatives of National Agricultural Research Systems, private fertilizer and seed sector associations, civil society organizations, and various public/private sector service providers. Participants took part in one or more activities, including workshops, meetings, calls, surveys, or had the opportunity to collect national data for the platform. We appreciate all your efforts.

We would especially like to thank the following institutions and organizations for their support and excellent work:

REGIONAL ECONOMIC COMMUNITIES

Economic Community of West African States

West African Economic and Monetary Union

Permanet Interstate Committee for Drought Control in the Sahel

ACRONYMS

AEZ . . . . . agro-ecological zone

AIP . . . . . agricultural input packages

FeSeRWAM. . . . . Fertilizer and Seed Recommendations for West Africa Map

GAP . . . . . good agricultural practices

IPM. . . . . integrated pest management

ISFM . . . . . integrated soil fertility management

NGO . . . . . non-governmental organization

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Figure 1. *FeSeRWAM homepage at www.feserwam.org*

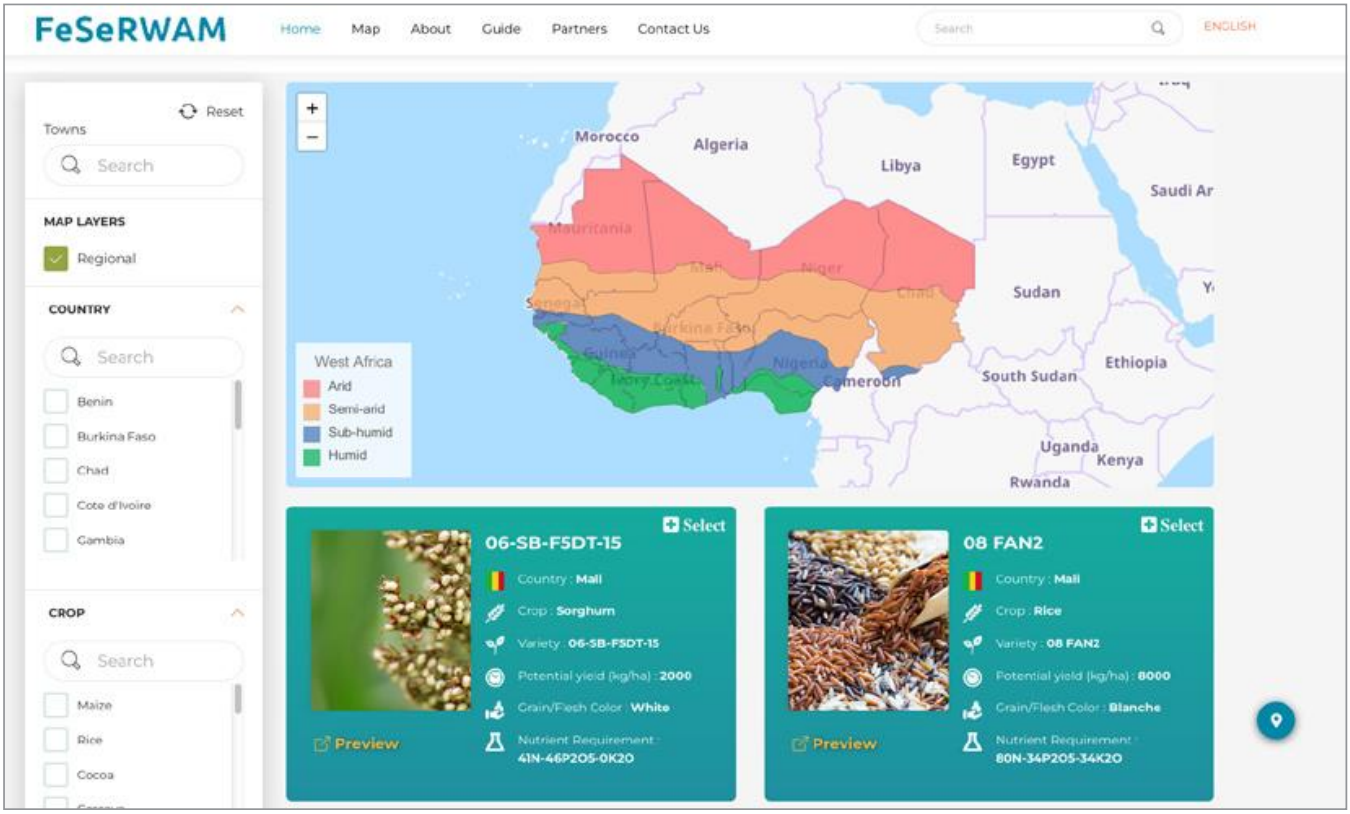
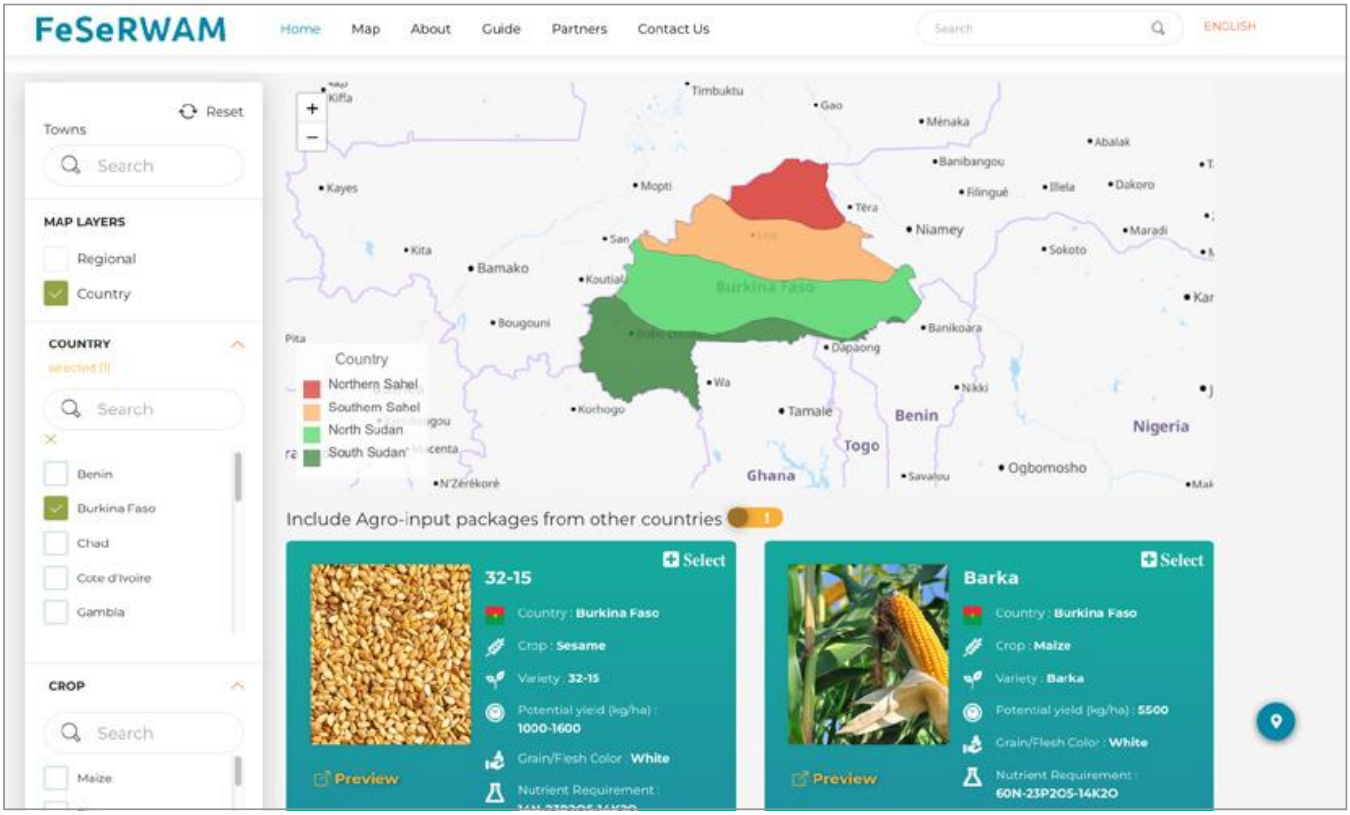


Figure 2. *Country-specific agro-ecological zones*



USE OF AGRICULTURAL INPUT PACKAGES FOR SUSTAINABLE PRODUCTIVITY IMPROVEMENT

INTRODUCTION FOR USERS

This module is designed for training in the use of AIPs developed for the promotion of the combined use of 1) improved seed variety, 2) appropriate fertilizer formulas and 3) good agricultural practices according to the Agroecological Zones (AEZ) in West Africa and Chad.

OBJECTIVES AND PREREQUISITES

Présentation et objectifs du module

This module serves to build the capacity of participants on the best ways to select and use Agricultural Input Packages (AIP).

More specifically, it is about making available to the participants:

- Basic information to better understand the problems of agricultural yields and productivity.
- Tools and methods to select the best AIPs according to the AEZ.
- Tools and methods for applying AIPs to improve agricultural yields and productivity.

Target audience

This module is intended for producers and other users. It is specifically aimed at:

- Agricultural producers.
- Agricultural input dealers.
- Agricultural advisory agents (state support services, NGOs, agro-enterprises, associations, etc.).




Training objectives

Upon completion of this module, participants will be able to:

- Understand the specificities of the major AEZs at the national and regional levels.
- Understand and describe the basic principles for selecting suitable varieties and major fertilizers, and their impact on yield.
- Understand the importance of AIP.
- Describe the method of application of the AIP for:
  - » Knowledge of the **production area**.
  - » Choice of **crop** and **variety**.
  - » The **type** and **category** of **quality seeds**.
- Understand the environmental and health safeguards related to the use of agricultural inputs.
- Understand how the FeSeRWAM platform works.

PEDAGOGICAL APPROACH

- A participative approach that puts the learner at the center and alternates theoretical contributions and concrete applications will be used.
- The training will be punctuated by a series of presentations and interactive discussions as well as practical exercises.
- Group discussions and self-correcting application exercises will help test knowledge.

PREREQUISITES

- Participation in this module does not require significant scientific knowledge, but basic knowledge of agriculture and a good understanding of agricultural yield and productivity issues are necessary to understand the concepts discussed.

SESSION 1. KNOWLEDGE OF PRODUCTION ZONES

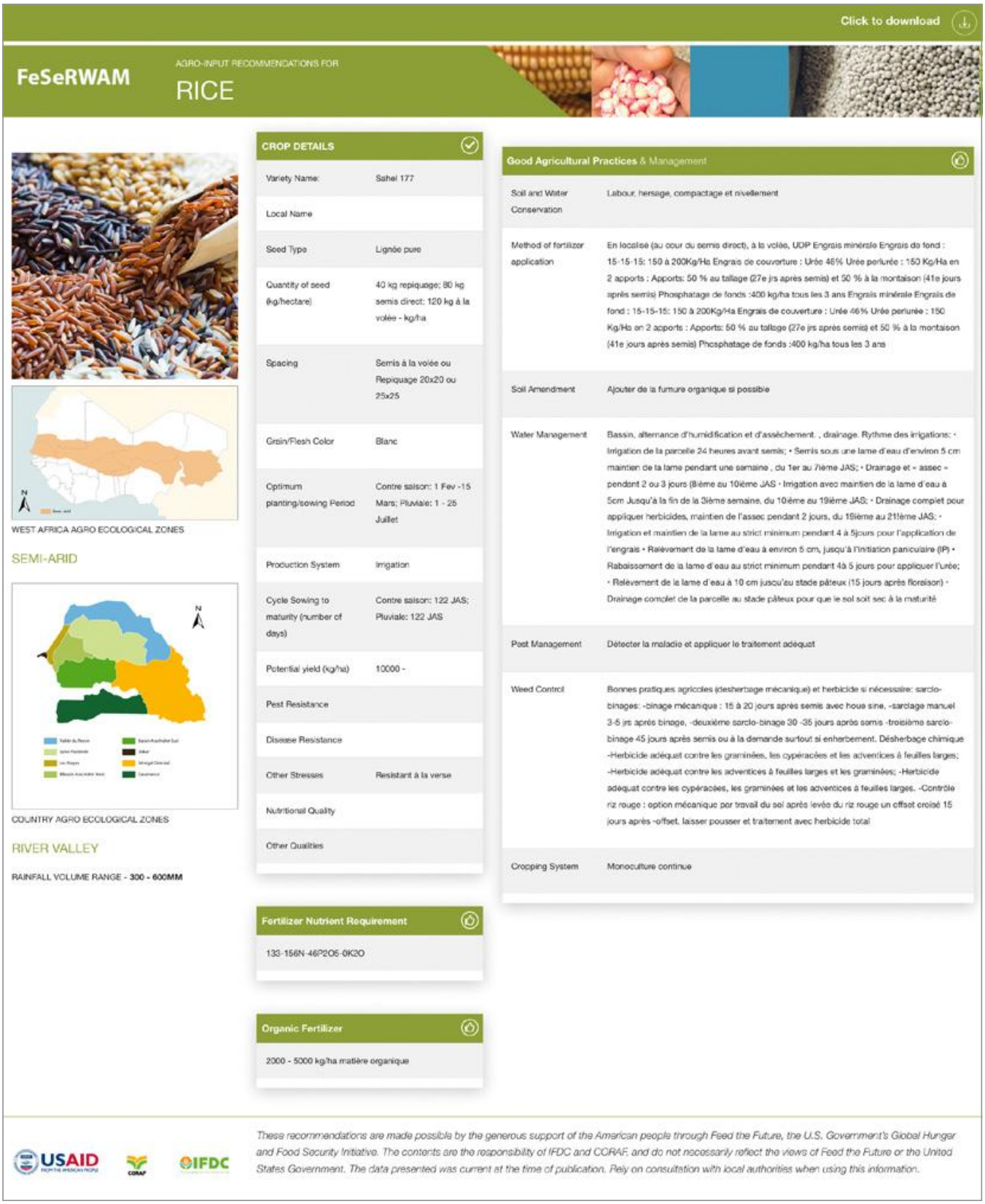
- Definition of an agro-ecological zone (AEZ):
- List the AEZ in your country:
- Name the AEZ in which you operate:
- List the challenges of these zones (incidence of pests and diseases, drought, flooding, etc.):

AGRO-ECOLOGICAL ZONES

Land resources mapping units, defined in terms of climate, landform, soils and land cover, and having a specific range of potentials and constraints for land use. (FAO, 1995)

- List characteristics of these zones (rainfall, soil, temperature, relative humidity, etc.):
- Describe the cropping system there:
- Name which crops are well adapted to or do well in these agro-ecologies:
- Name the varieties/hybrids that perform well in these zones:
- Which maturity group do you prefer for your choice of varieties?
- Identify the resource endowments of your agro-ecologies (market access, irrigation facilities, water bodies, road infrastructure, etc.):

Figure 3. *Example of an AIP for rice in Senegal: Sahel 177*



SESSION 2. KNOWLEDGE OF AIP

Definition of an AIP (amended, validated, and suggestions)

- What are AIP? (statement and rationale)
- Relevance to seeds/varieties, fertilizers, and GAP.

Benefits of using AIP (amended, validated, and suggestions)

- Demonstrate added value.
- Increased yield thanks to application of AIP.
- Improved cost/benefit ratio.
- Protection of the environment.
- Access to AIP (brochure and FeSeRWAM platform + use).

Access to AIP (brochure et plateforme FeSeRWAM) (amended, validated, and suggestions)

- Download the AIP (PDF and digital).
- Contact the agricultural advisory service.

Figure 4. *The download button is located in the upper right corner of the AIP view*

Challenges

- Internet access (purchasing power and network stability).
- Ability to use the platform (ICT knowledge and illiteracy).

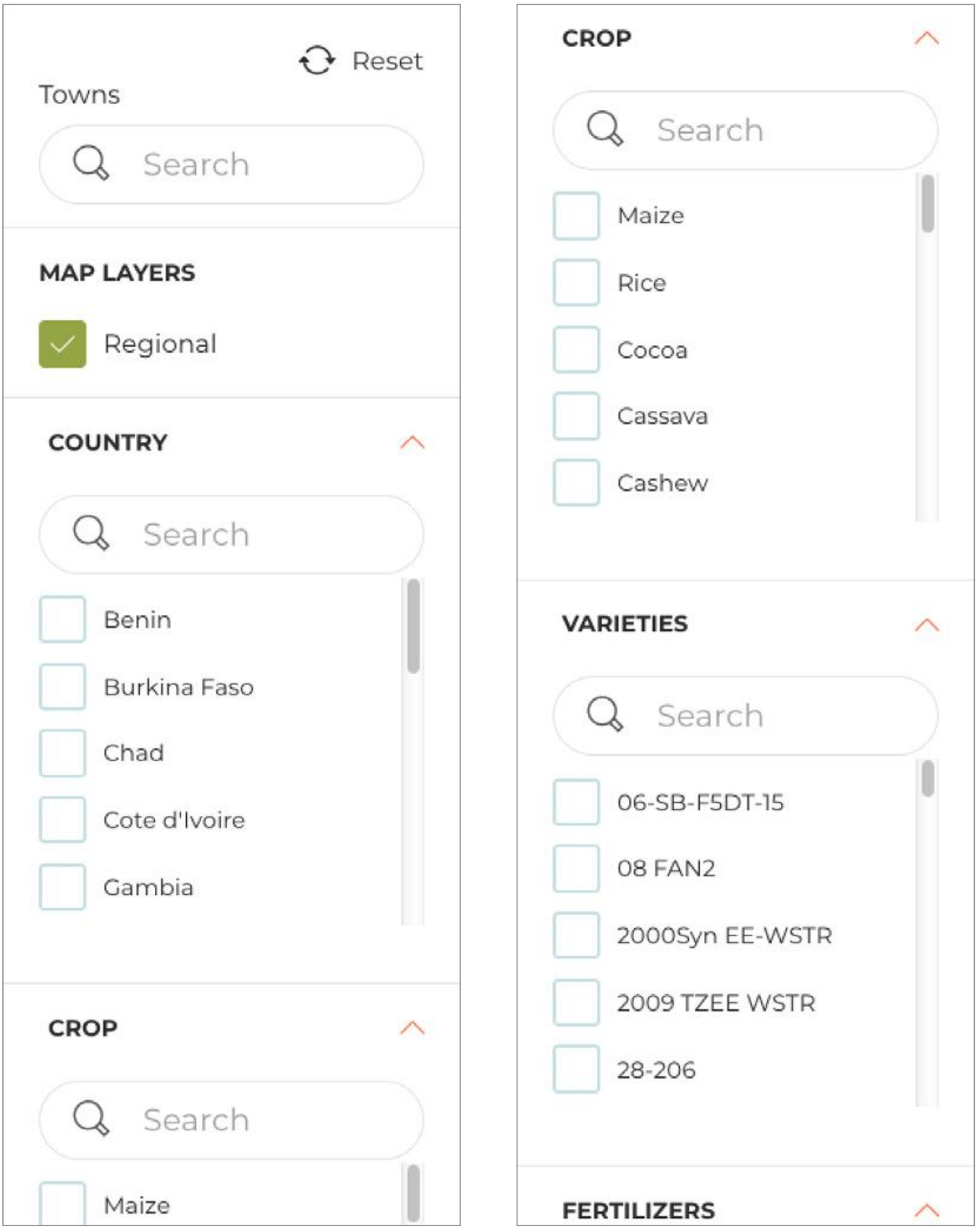
Suggestions

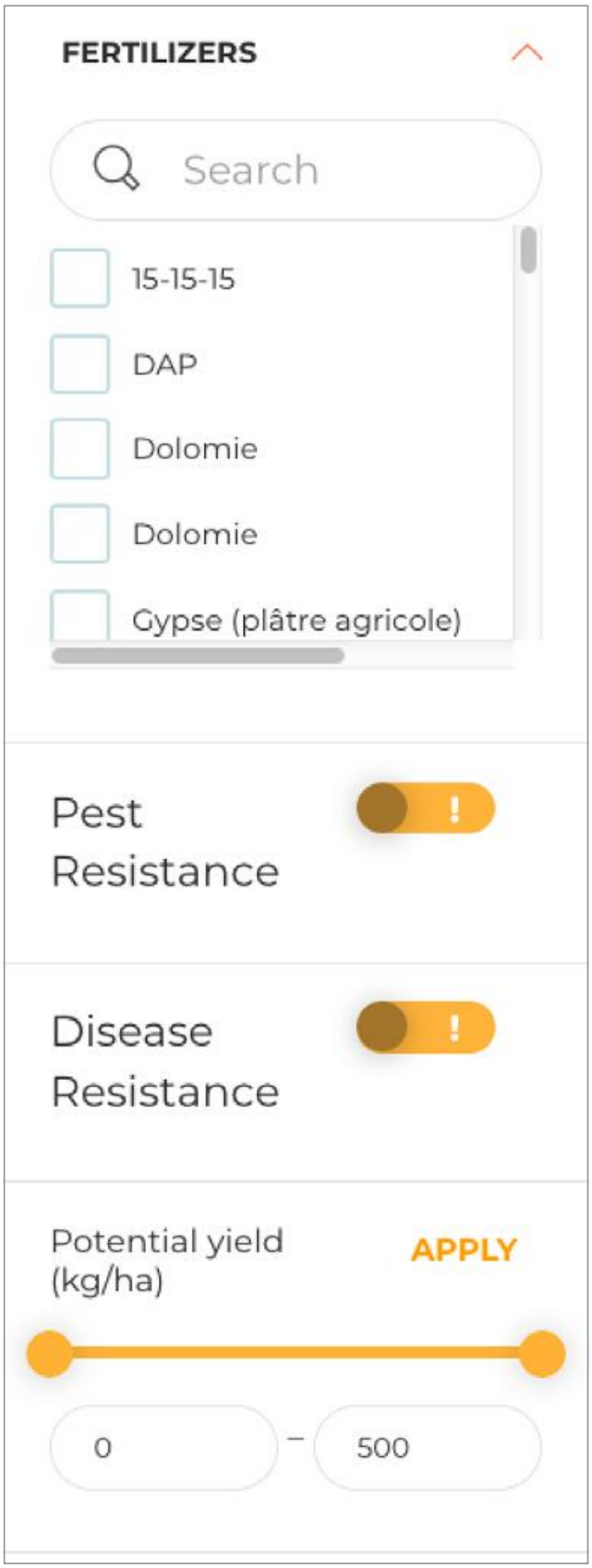
- Community radio and TV broadcasts by associating the agro-dealer (communication and marketing strategy).

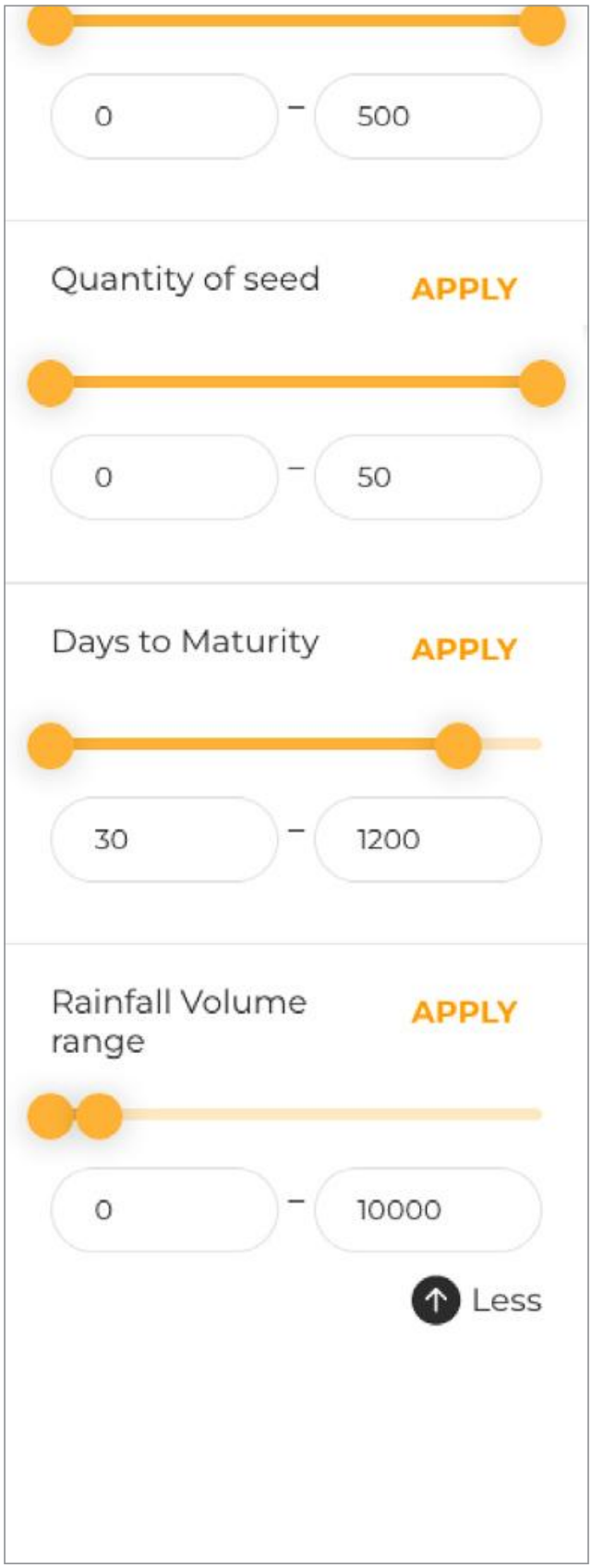
Training time

- 30–45 min.

Figure 5. *Search controls available in the sidebar of FeSeRWAM.org*




FERTILIZERS
Search
15-15-15
DAP
Dolomie
Dolomie
Gypse (plâtre agricole)
Pest Resistance
Disease Resistance
Potential yield (kg/ha)
APPLY
0
500


0
500
Quantity of seed
APPLY
0
50
Days to Maturity
APPLY
30
1200
Rainfall Volume range
APPLY
0
10000
Less

SESSION 3. APPLICATION OF AIP

Variety selection

- Yield potential.
- Soil type and fertility of farmland.
- Crop calendar/planting date/time to maturity.
- Pest prevalence in location.
- Disease prevalence in a location:
  - » Length and distribution of rainfall.
  - » Attributes of the variety.

Soil preparation

- Soil analysis (where service available).
- Size of plot/field.
- Herbicide spray.
- Plough.
- Harrow (ridging).
- Labor for all farm operations.

Setting up the crops

- Consult weather forecasting for rainfall data.
- Adequate moisture before planting.
- Training sessions.

Calculating the seed rate

- Recommended spacing/plant population.
- Seed rate.
- Practical methods.
- Impact on performance.

Definitions and generalities

- Soil fertility (types of fertility, fertility factor, and fertility study method).
- Plant nutrition and the role of nutrients.
- Physico-chemical properties and soil organic matter.
- Fertilization.
- Amendments.

Mineral and organic fertilization

- Reminder of the definition of fertilization.
- Theoretical laws of mineral fertilization.
- Plant needs.
- Definition of fertilizers and presentation of formulation specifications of the main fertilizers.
- Definition of fertilizer doses (4R: right source, right dose, right place, right time).
- Types of fertilizers (simple mineral, compound mineral, organic, organo-mineral and microbial bio fertilizers).
- List of approved fertilizers and recommended rates.

Amendments

- Mineral amendments.
- Organic amendments.

Protecting human health and the environment

- Storage of products.
- Use (precautions of use).
- Reasonable use of amendments and fertilizers.
- Risks related to the misuse of soil improvers and fertilizers.
- Management of empty packaging.

CROP MANAGEMENT SYSTEMS

Water management

- Rainfed.
- Water conservation.
- Irrigation:
  - Duration scheduling (frequency of irrigation).

Pest management

- Identification of pest type.
- Observation and management.
- Integrated pest management (IPM).

Weed management

- Identification of weed type.
- Cultural practice.
- Herbicide management.
- Integrated weed management.
- Types :
  - Define the type of practice recommended by the AIP.
  - Soil preparation (tillage).
  - Weeding.
  - Mulching.
  - Herbicide treatment.
- Frequencies:
  - Weeding (depending on crop and environment).
  - Chemical weeding (depending on crop and environment).
- Crop rotation, crop associations:
  - Cereals, legumes.
  - Improving plants.
- Agriculture/livestock integration:
  - Compost.
  - Use of animal wastes as manure on farmland.
  - Direct placement of animals on farmland.
- Agroforestry:
  - Fruit trees integrated with crops.
  - Regional training for AIP dissemination.
- Conditions for success:
  - Respect the calendar by adapting to climate change (frequency).
  - Respect the dose.
  - Use of appropriate equipment.
- Tools used:
  - Small agricultural equipment (machete, daba).
  - Tractors (gyro-cutters).

SESSION 4. PRACTICAL EXERCISE TO SELECT AN AIP (CHOOSE THE METHOD)

Conclusion - closing

- Evaluation of the training.
- Collection of participant feedback.

Practical aspects

There are 2 types of exercises:

- In-situ (room):
  - Choice of location.
  - Identify soil types.
  - Explain the different AEZ.
  - Choice of seed.
  - Cultivation calendar.
  - Knowledge of weeds (weeds harmful to crop yield).
- Ex-situ (in the field):
  - Recognition of weeds (weeds harmful to crop yield).
  - Recognition of off-types (in the case of seed multiplication).
  - Recognition of diseased plants.
  - Recognition of insects.
  - Identify soil types.

Teaching materials

- AIP.
- Figurines.
- "Padex" paper.
- Different colored pencils.
- Scotch tape.
- Video projector.

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