

Platform
for Agricultural
Risk Management

Managing risks
to improve farmers'
livelihoods

Workshop



Information Systems for Agricultural Risk Management

Workshop Report

IFAD HQ, Rome - Italy | 31st January, 2017

Volume 1

Main Report

Better information.
Enhanced risk management.
More investment in agriculture.





PARM
PLATFORM FOR
AGRICULTURAL RISK
MANAGEMENT

Platform
for Agricultural
Risk Management

Managing risks to improve farmers' livelihoods

Information Systems for Agricultural Risk Management

Knowledge Sharing Workshop

Thursday, 31st January 2017





Better information. Enhanced risk management. More investment in agriculture.

Good and accessible information is the main requirement for an efficient management of agricultural risks. The Platform for Agricultural Risk Management (PARM) in collaboration with other partners is organizing an International Workshop on Information Systems for Agricultural Risk Management (IS-ARM) in order to explore gaps and opportunities in developing harmonized information systems to enhance investments in agriculture to manage risks.

Date:

Tuesday, 31st January, 2017

Venue:

International Fund for Agricultural Development (IFAD)

Italian Conference Room
Via Paolo di Dono, 44
00142 Rome, Italy

Foreword

The Platform for Agricultural Risk Management (PARM) is a G20 initiative led by IFAD and supported by the European Commission (EC), Agence Française de Développement (AFD) and the Italian and German cooperation focused on enhancing agricultural risk management in developing countries. PARM works in Africa in strategic partnership with NEPAD at regional and national level. During its risk assessment analysis with governments and experts from eight African countries, PARM has experienced the intense need of information and the significant gaps for proper agricultural risk assessment and management. At the same time, information technologies and other innovations are opening new roads to improve the availability, quality and accessibility of information. The need to study the state of information systems for agricultural risk management and sharing the innovative experiences that are already taking place was also raised by many of our partners.

Responding to this demand, PARM has carried out a study on seven African countries and organized an International Workshop on Information Systems for Agricultural Risk Management on the 31st January, 2017 in IFAD Headquarters in Rome. The response from our partners has been almost overwhelming making this event a very dynamic and lively exchange of experiences. In particular, the “information market” on different innovative information initiatives was full of energy and new opportunities. We believe that this successful sharing of knowledge is the best way to learn and create new partnerships.

The Platform for Agricultural Risk Management would like to thank all the participants for their active participation and contribution during the workshop. Special thanks to the various panellists who provided their valuable inputs during the discussions. We hope that this workshop report will also contribute to build the way forward on the basis of the discussions and lessons learnt.

Contents

Workshop Programme.....	9
The Context	10
The Host	10
The Study	11
The Workshop	11
The Agenda	12
Workshop Outcomes.....	15
Opening Remarks	16
Session 1 Setting the scene: information systems for agricultural risk management.....	16
Session 2 Information Systems: sources, tools and accessibility.....	17
Launch of the Study	20
Session 3 Information Systems: applications and innovation for risk management.....	20
Session 4 Integration of information systems in decision-making: the way forward.....	21
Closing Remarks	19
Take-aways	19
Annexes	25
Annex 1: Findigs of Session 2: WorlCafé Group Discussions.....	26
Annex 2: List of Initiatives.....	30
Annex 3: List of Participants.....	35



PARM
PLATFORM FOR
AGRICULTURAL RISK
MANAGEMENT



Workshop Programme

Better information.
Enhanced risk management.
More investment in agriculture.

The Context

Information is the main raw material for agricultural risk management (ARM). Without information there is no way to assess the likelihood and severity of different risks, no way to be prepared in advance or improve resilience, nor to agree on how to manage or transfer the risk to others. Information from different sources on markets, climate and weather, diseases, inputs and technologies is the “light” that is needed to manage risks. Information systems play a broader role for agriculture, for good business practices, to improve livelihoods, increase productivity and ensure efficient value chains. Risk management is among the most information intensive aspects of agriculture, because of the deep information needs in terms of disaggregation in the space and evolution and changes over time.

Information and communication have always mattered in agriculture. Ever since people have grown crops, raised livestock, and caught fish, they have sought information from one another. What is the most effective planting strategy on steep slopes? Where can I buy the improved seed or feed this year? Who is paying the highest price at the market? Producers rarely find it easy to obtain answers to such questions, even if similar ones arise season after season. Farmers in a village may have planted the “same” crop for centuries, but over time, weather patterns and soil conditions change and epidemics of pests and diseases come and go. Updated information allows the farmers to cope with and even benefit from these changes. Providing such knowledge can be challenging, however, because the highly localized nature of agriculture means that information must be tailored specifically to distinct conditions.

Information about production, prices and diseases is key to assess farming risks and to find the most appropriate risk management strategies. Long historic inter and intra-annual information, and disaggregated data for specific locations is particularly useful for this purpose. Indeed information is the key input for most management and risk management decisions in the farm. In addition, exposure to these risks prevents farmers from easily planning ahead and making investments. In turn, risk inhibits external parties' willingness to invest in agriculture because of the uncertainty about the expected returns. In this context, where taking decisions on how to best manage the complex farming risks scenario requires reliable, timely and accessible information, the need for better information systems becomes more and more crucial.

At the same time information systems are significantly evolving in recent times, in terms of the type and amount of information that is and can be gathered, but also in terms of who collects and hosts the information and how it can be accessed. Information and communication technologies are generating a revolution in terms of satellite, sensor and geospatial data, access through mobile devices, and collection of unstructured but Big Data. This revolution is particularly relevant in agriculture because it has a particular larger incidence on remote areas that before had less information collected and worse access. This is a big opportunity for agricultural risk management. For the insurance industry to develop new products and fill information gaps; for the financial institutions to be able to manage the risks from the agricultural sector; for farmers to improve their resilience and enhance their investments in the farm and in the household; for governments to better design their policies.

The Host

The Platform for Agricultural Risk Management (PARM), is an outcome of the G8 and G20 discussions on food security and agricultural growth. PARM is a four year multi-donor partnership between the European Commission (EC), the French Development Agency (AFD), the Italian Development Cooperation (DGCS), German Cooperation (BMZ/KfW) and the International Fund for Agricultural Development (IFAD) in strategic partnership with the New Partnership for Africa's Development (NEPAD) and other development partners to make risk management an integral part of policy planning and implementation in the agricultural sector. The Platform plays the role of facilitator in bundling the know-how of participating donors for the development of methodologies for risk analysis and the adoption of risk management strategies, integrating risk management instruments and approaches in public policies, private sector practices and agricultural investment programmes. The overall objective of PARM is to contribute to sustainable agricultural growth, reduce food insecurity, and improve livelihoods of rural and poor farming households in developing countries.



The Study

To respond to the Government demands, PARM has committed a study on **“Informational Assessment of Agricultural Risk Management Information Systems (ARM-IS)”** in 7 Africa Countries: Cabo Verde, Cameroon, Ethiopia, Mozambique, Niger, Senegal and Uganda. The purpose of the study is to investigate the availability and quality of information for agricultural risk management purposes and the timely and useful access by stakeholders at micro-meso-macro level. At country level, the scenario reflects often information systems thematic-focused and not integrated and harmonized in a more holistic system. There are significant gaps in information collection and access that often occur in a systematic manner across countries. These gaps create asymmetries and inefficiencies in the management of risks in the agriculture sector.

The Workshop

As part of the broader objective of PARM to strengthen the creation and sharing of knowledge among stakeholders and raising awareness on ARM, the Platform, following Government demands, has identified information systems as a main limiting factors to assess and manage risks and therefore make informed decisions and investments in agriculture to develop ARM tools in several sub-Saharan African countries.

The publication of the ARM-IS report was a good occasion for PARM to organize a knowledge sharing event that brought together over 60 practitioners from public sector, private sector, the farming community, and the development community to share experiences and innovations on information systems for agricultural risk management, through panels and group sessions.

For this reason, the main objective of the workshop was to lead collaborative dialogue and knowledge sharing among the different thematic experts and facilitate the collection of recommendations on how to make accessible information and develop harmonized information systems to enhance investments in agriculture.

Objectives

- Identify the specific information needs for agricultural risk management such as the type of information and sources, and the characteristics of the information in terms of time series availability and geographical disaggregation.
- Identify the main information gaps for agricultural risk management in terms of availability, accessibility and quality. Accessibility is understood as usability of the information by final users (farmers, governments, private sector, etc.) for risk management purposes.
- Share knowledge and specific experiences on how information and communication technologies are already covering gaps in terms of information collection, sharing, analysis and accessibility.
- Share experiences on how different types of partnerships or institutional arrangement between different stakeholders and initiatives from the public and private sector and from national and international agencies, can create opportunities for access and use of information for agricultural risk management.

Outcomes

- Facilitate knowledge sharing, peer-to-peer, south-south cooperation on ARM
- Facilitate building partnership among practitioners
- Provide practitioners with the results from recently carried out analysis on ARM related information systems;
- Jointly develop recommendations on priorities and activities needed for improvements in ARM related information systems.

Better information.
Enhanced risk management.
More investment in agriculture.

The Agenda

Time	Description	Presenter
08:30 - 09:00	Registration of participants	
09:00 - 09:15	Opening Remarks	<i>Adolfo Brizzi</i> , IFAD
09:15 - 09:20	Workshop Objectives and methodology	<i>Ute Eberhardt</i> , Workshop Facilitator
Session 1. Setting the scene: information systems for agricultural risk management		
09:20 - 10:15	<p>Plenary Panel Discussion</p> <ul style="list-style-type: none"> Assessment of Agricultural Risk Management Information Systems in Africa Remote sensing for ARM ICT at the service of ARM Big Data for ARM 	<p>Facilitator: <i>Jesús Antón</i>, PARM</p> <p><i>Alberto Garrido</i>, CEIGRAM</p> <p><i>François Kayitakire</i>, JRC/EU</p> <p><i>Carlos Arce</i>, World Bank</p> <p><i>Jawoo Koo</i>, CGIAR/IFPRI</p>
10:15 - 10:30	Panel Discussion Q&A	Facilitator: <i>Ute Eberhardt</i>
10:30 - 10:45	Coffee Break	
Session 2. Information Systems: sources, tools and accessibility		
10:45 - 12:15	<p>World Café Group Discussion</p> <p>Thematic Block 1 Meteorological and climate information (inclusive of Satellite image information)</p> <p>Thematic Block 2 Market and price information</p> <p>Thematic Block 3 Information on Plant and Animal production and health</p>	<p>Facilitator: <i>Ute Eberhardt</i></p> <p>Discussant Leaders TB1: <i>Rogério Bonifacio</i>, WFP <i>Paxina Chileshe</i>, ECD/IFAD</p> <p>Discussion Leaders TB2: <i>Hélène David-Benz</i>, CIRAD <i>Abdolreza Abbassian</i>, AMIS/FAO</p> <p>Discussion Leaders TB3: <i>Fairouz Larfaoui</i>, EMPRES/FAO <i>Dannie Romney</i>, CABI</p>
12:15 - 12:45	Report Back from Groups: recommendations	Facilitator: <i>Ute Eberhardt</i> Discussant Leaders: <i>TB1, TB2, TB3</i>
12:45 - 13:45	<p>DINING ROOM</p> <p>“Lunch with the Authors”</p> <p>Official release of PARM’s study on “Informational Assessment of Agricultural Risk Management Information Systems in Africa”</p>	<i>José Maria Sumpsi</i> , CEIGRAM <i>Alberto Garrido</i> , CEIGRAM



Time	Description	Presenter
Session 3. Information Systems: applications and innovation for risk management		
13:45 - 15:15	<p>Information Market Showcase</p> <p>Round 1 (parallel sessions) Holistic IS-ARM at Country-level</p> <p>Beyond Climate</p> <p>From Insurance to Social Protection</p> <p>Round 2 (parallel sessions) Global Holistic IS-ARM</p> <p>From Global Market to Farmer Gate</p> <p>Getting Information from the Crowd</p>	<p>Facilitator: <i>Ute Eberhardt</i></p> <p><i>Jaime ter Linden, FIRM</i> <i>Ben Addom, CTA</i> <i>Roger Day and Dannie Romney, CABI</i></p> <p><i>Michel Deshayes, GEOGLAM</i> <i>Tristan d'Orgeval, PREMISE</i> <i>Moussa Mama, ECOAGRIS/AGRHYMET</i></p> <p><i>Federica Carfagna, ARC</i> <i>Laurent Tits, WRMF/VITO</i> <i>Natalia WinderRossi, FAO</i></p> <p><i>Rogério Bonifacio, WFP</i> <i>Bruce Isaacson, FEWSNET/USAID</i> <i>Fairouz Larfaoui, EMPRES/FAO</i></p> <p><i>Abdolreza Abbassian, AMIS/FAO</i> <i>Gerald Masila, RATIN/EAGC</i> <i>Semou Diouf, PAFA/IFAD</i></p> <p><i>Gloria Solano-Hermosilla, Gunter Zeug and Conrad Bielski, JRC/EU</i> <i>Alexander Kennepohl, PEAT</i> <i>James Nguo, FARMIS/ALIN</i></p>
15:15 - 15:45	Panel Discussion Q&A	Facilitator: <i>Ute Eberhardt</i>
15:45 - 16:00	Coffee Break	
Session 4. Integration of information systems in decision-making: the way forward		
16:00 - 16:10	Wrap up Summary of Session 1,2 and 3	<i>José María Sumpsi, CEIGRAM</i>
16:10 - 17:00	<p>Plenary Panel Discussion</p> <ul style="list-style-type: none"> • Policy interlinks • Enhance investment decisions • Open information networks and accessibility • Sustainability of information systems • Innovation and technology • Institutions and partnerships • The role of private sector 	<p>Facilitator: <i>Jesús Antón, PARM</i></p> <p><i>Paul Winters, IFAD</i> <i>Bing Zhao, WFP</i> <i>Rob Vos, FAO</i> <i>Mariam Soumare, NEPAD/AU</i> <i>Tuga Alaskary, ARC</i> <i>Fatma Ben Rejeb, PAFO</i> <i>Alexa Mayer-Bosse, Munich-Re</i></p>
17:00 - 17:30	Panel Discussion Q&A	Facilitator: <i>Ute Eberhardt</i>
17:30 - 17:45	Closing Remarks	<i>Périn Saint-Ange, IFAD</i>
17:45 - 18:30	DINING ROOM "Cocktail Exhibition"	



PARM
PLATFORM FOR
AGRICULTURAL RISK
MANAGEMENT



Workshop Outcomes

Better information.
Enhanced risk management.
More investment in agriculture.

Opening Remarks

The workshop was launched with the opening remarks of Adolfo Brizzi, Director of the Policy and Technical Advisory Division (PTA) in IFAD.

The power of information to enhance rural investment is just self-evident. In managing its program of loans and grants, IFAD faces daily the need to manage agricultural risks and to have access to good information for decision making. Often the main emphasis is made on improving its quality, but ensuring equal access, in particular by the rural poor, is also very important for an organization working on rural poverty like IFAD.

This workshop has a great potential for a rich multidisciplinary discussion thanks to a large heterogeneity of participant's backgrounds. With initiatives from very different size and scope: experts from International Organisations running large early warning systems together with small private initiatives developing ICT applications for information gathering and service delivering.

Information is needed by all disciplines and risk management requires a holistic approach that cross-cuts different disciplines as if there was no boundary. Information systems are a very fertile area for innovation. In fact, new technologies are often referred as Information and Communication Technologies ITC. But innovations from technology such as mobile phones or the use of satellite information need to be combined with institutional innovation to share and make information interconnected.

SESSION 1

Setting the scene: Information Systems for Agricultural Risk Management

This first plenary session was composed by a panel of experts and researchers in the information systems sector, including Alberto Garrido from CEIGRAM, Francois Kayitakire from EU/JRC (Remote Sensing), Carlos Acre from the World Bank (ICT) and Jawoo Koo from CGIAR/IFPRI (Big Data). The discussion permitted to set the scene of the discussions on information systems, stressing the important areas of information systems frameworks for ARM such as ICT systems, Big Data and Remote sensing systems.

During the plenary, panel experts and the facilitator discussed in a form of a talk show on the following topics:

- Information needs for ARM: Why are they so intensive?
- The set of available information systems tools: quality, harmonization and institutional setting
- How ensure accessibility and use by different types of users?
- The discussion brought out experiences from countries, challenges and innovations in the three key thematic areas.

According to Alberto Garrido, main researcher of PARM's IS-ARM assessment study, the high intensity of information needs for agricultural risk management can be explained by three factors:

- The heterogeneity and diversity of the agricultural sector
- The type of hazards and threats
- Types of farmers and value chain

It is important to focus on specific thematic areas of risks and provide deeper analysis rather than having broader information. Information systems should be very specific, powerful and useful for the beneficiaries. It was suggested to at least focus on no more than three relevant risk.

The World Bank explained ICT initiatives for farmers, in the context of drastic changes on availability and efficiency of ICT in developing countries. In East Africa for instance, the information is available but it is difficult for farmers to access it. Thus, developing applications that are useful for packaging information and facilitate access for farmers would help fill in the gap. "All farmers are risk managers in nature" and make risk management decisions in a daily basis. Indeed, farmers pay to get the information but only if they trust the information



provided. The software capacities have to be developed by the countries themselves, in order to be more efficient and useful for the local beneficiaries. Different initiatives are developed by the private sector in term of innovative technology. Web-services are not always efficient because farmers cannot use internet in remote areas. It's the role of the private sector to make sure technology reaches farmers.

The involvement of farmers in collecting data is quite important as most of the time farmers are not directly involved in the collection of data. If the farmers trust the information they will pay to receive the information related to their agricultural concern. The government has also a role to play in the dissemination of information. Big data allows to fill many of the missing gaps for agricultural risk management, but it needs coordination in an early state of the development of any information system to ensure that its capacity to complement other IS.

SESSION 2

Information Systems: sources, tools and accessibility

The session 2 was divided in two rounds. The first round was composed of group discussion by thematic block including:

- Thematic block 1: Meteorological and climate information
- Thematic block 2: Market and price information
- Thematic block 3: Plant and animal health information

Under each thematic block there were two sub-groups for which a Discussant Leader was assigned to lead the discussion and report back to the audience at the end of the session. The first group focused on the characteristics of ARM information and how it is collected. The second group discussed on the accessibility issues and tools.

The first round involved groups of people with experiences in a common thematic area of risk, whereas the second round gathered participants with experiences on different areas of risk.

In the second round, the groups identified common needs, and complementarities of information for managing risks in the areas of climate, pests/disease and market. One important thing about the round two is that the members got to appreciate the need for holistic information for ARM. Towards the end, members also looked forward to the available and potential tools for collecting and disseminating complete agricultural risks information.

ROUND 1

In order to achieve global development objectives of reducing poverty, increasing nutrition and food security in developing countries, efforts are required to help farmers manage risks that affect their livelihoods and the agricultural sector, in general. The primary step towards managing risk is to have access to quality, reliable, long-term, disaggregated information on the various risks that affects farmers. Good information may help farmers, governments and investors to design pro-active policies and strategies to manage risks. In each group the following topics were discussed facilitated by discussion leaders:

Characteristics of ARM information and how it is collected. What type of information is needed to manage climate risks? What level of aggregation, time series and quality? Which are the main variables needed to assess the risks in this thematic block? Which are the main information gaps? Which tools or systems are or could be useful for gathering the information for ARM on this thematic block? What is the role of the actors (governments, farmers, market players other stakeholders) in helping to gathering risk related information?

Accessibility issues and tools. What are the main accessibility challenges? Are the existing initiatives and institutional frameworks (local, national and international levels) able to enhance access to information for policy makers, market players and farmers? Which ICT or institutional innovations are already improving the usability of good information for ARM in this thematic block? Which tools are or could be used to disseminate the information to help the various actors (governments, farmers and market players) to use the information to manage risks?

Summary of discussions

Thematic Block	Characteristics of ARM information	Accessibiilty issues and tools
Climate	<ul style="list-style-type: none"> Disaggregation Probability Indices Long term record 	<p>Accessibility issues:</p> <ul style="list-style-type: none"> Data is not available for the farmers Historical trends Difficulty to access information Cost implications The language/literacy level Limited channels of dissemination <p>Tools:</p> <ul style="list-style-type: none"> Mobile phones/radios Needs of early warning information Dissemination from the government to the local level
Market	<ul style="list-style-type: none"> Price is a main risk confronting the farmers Input cost Government policies interfere with the price prospect Underestimating the risk that confront small holder farmers Issue of safety net: a way to mitigate risk for small holder farmers 	<ul style="list-style-type: none"> Farmers accessibility to information The trend of the information Understanding the meaning of the information What kind of technology relevant to the farmers
Pest and diseases	<ul style="list-style-type: none"> Location Type Intensity Severity/ loss Soil, climate, weather Level of aggregation: currently international and national and in the nea future local and at farmers level 	<ul style="list-style-type: none"> Information not known to the farmers Depends on the country and the type of pests. Most of the information are lacking

ROUND 2

Risks that affect farmers' livelihoods are connected to each other. For instance, seasonal dryness of farmland may increase crops susceptibility to pests and diseases, and may also expose farmers to periodic commodity price volatilities in the market. An efficient management of these risks requires a holistic approach, combining information from climate, crop and animal health, market and other thematic areas. The three groups will mixed with each other and combine in each group experts from two or more thematic block to identify the linkages between different thematic information systems. The discussion leaders from each group facilitated the cross theme discussions on the following questions:

The second round focused the discussion on the importance to identify complementarities and integrate di ferent information systems for an holistic ARM. Groups discussed on:

Common needs and complementarities. Are there information needs in common between the different thematic blocks climate, crop/animal health and market? Are there significant information complementarities? How can information from others (e.g. crop/animal health and market) help manage risks related to one thematic block (e.g. climate) related?

Convergence into single tools. By which specific tool(s) is it possible to converge information from one thematic block (e.g. climate) and other information (e.g. crop/animal health and market) in order to disseminate holistic information to Policy makers, Market players and Farmers?

Summary of discussions:

Thematic Block	Common needs and complementarities	Common challenges in accessing information	Common Tools/Convergence of Tools
Climate	<ul style="list-style-type: none"> • There are 4 Dimensions: Trends, average, variability, extremes • Forecast (short term, monthly and seasonal) 	<ul style="list-style-type: none"> • Coordination across different stakeholder groups • Capacity of informing the users (farmers) • How to reach (hard to reach remote areas) • Understanding user demands (information types, context, farmers) • Timeliness of information (providing when it is needed the most) • Quality of data (limited sources) • Capacity of data processing 	<ul style="list-style-type: none"> • Coordination platform (across multiple stakeholder) • Key role of extension services • Willingness to pay the service • Information subsidy: specific information • Dashboard of information • Service providers
Market	<ul style="list-style-type: none"> • Forecast on production (weather) • Access to information and data quality • Transport & logistical factors 	<ul style="list-style-type: none"> • Methodology: convergence on standards to collect and process data (methods + access) • Complementarity between dissemination methods 	<ul style="list-style-type: none"> • Standards to collect and process data (methods) + access • Complementarity between dissemination tools (internet, radio, cell phone, direct human interaction) • Two ways information systems (users contribute to feed IS)
Pest and diseases	<ul style="list-style-type: none"> • How the farmer understand and make proper use of the information • Capacity building for farmers • Cost sharing at farm level (ex: mobile phone) • Trust • Lack of constituency: fragmentation of information 	<ul style="list-style-type: none"> • Timely access • Context • A two way process (trust) • Farmers want to have feedbacks on the information they provided • Technology information access: gender issue (women don't have access to mobile phones) • Many initiatives at the farmer level, policy level and private sector level • Importance of the reliability/ accessibility of data. 	<ul style="list-style-type: none"> • No unique tool for different stakeholders • Reliability and accessibility of data • Aggregation of data according to users • Different tools are used to access different kind of information

Wrap up session 2: Key message from the group discussions

During the discussions the participants raised the importance to standardize the information by taking into account the users. The information has to be accessible through the dissemination of technology, however the main issue is the limitations to the access of internet in remote areas, therefore the systems can be good but limited in term of use for the farmers. The use of local languages and the participation of local farmers is also important in the collection of information. The capacity building of farmers to allow them interpret properly the information and the sustainability of the information systems was also raised. The sustainability of information systems was mentioned as well.

Launch of the study

At the end of the Session 2 participants were invited to assist to the “Lunch with the Authors”, in which occasion PARM officially released its study on “Information Systems for Agricultural Risk Management in Africa”. Participants were able to meet the authors and were briefed about the main finding of the study

SESSION 3

Information Systems: applications and innovation for risk management

The information market session was open up in the afternoon to go more in depth into the application of specific innovative information systems. The session was organized in a way to allow different organizations to showcase well-designed applicative tools to the audience. Each presenter communicated his/her tool/initiative works for target users to manage agricultural risks. The Information market and showcase session allowed presenters to highlight strengths of their tools and the audiences to provide feedback into the innovativeness and possible limitations that needs to be reworked for effective ARM information system management.

All the presentations of these initiatives are available in Volume II of this report. Below is an overview of the different topics:

Topic 1: Holistic IS-ARM at country-level

This group brought together forecast/monitoring initiatives that have concrete examples at country level, integrating the three type of information systems: climate, market and plant and animal health. It sought to provide an holistic overview of possible integrated information systems for a better agricultural risk management and open discussion on possible ways to merge both health/disease issues with market, particularly during monitoring and data management phases of ARM.

- Agri Risk Analyzer. Presenter: Jaime ter Linden, FIRM
- Market-led, User-owned ICT4Ag-enabled Information Service (MUIIS), Uganda. Presenters: Benjamin Kwasi Addom, CTA
- Plantwise by CABI. Presenters: Dannie Romney and Roger Day, CABI

Topic 2: Beyond climate

Weather and market are two connected sources of risks in the agricultural sector. Solutions to each area usually disconnect the other. Each of the three presenters under this topic showcased how their tool/application combines/merges information from climate and market sources, makes meanings into them for extensive agricultural sector risk management, beyond the climate-induced risks like drought, flooding etc.

- GEOGLAM Crop Monitor for Early Warning. Presenter: Michael Deshayes , GEOGLAM
- PremiseData. Presenter: Paolo Lucchino, Premise
- ECOWAS Agriculture Regional Integrated Information System (ECOAGRIS). Presenter: Moussa Mama, Centre Regional AGRHYMET

Topic 3: From Insurance to social protection

Early warning systems from main inputs for proper assessments, forecasting and monitoring of risks. They play important roles for food security, health/disease monitoring, and crop/plant production management. International institutions rely on early warning systems to formulate insurance and social protection tools for assisting vulnerable agricultural households to manage risks. Presenters in this group showcased how their tools/initiatives work to communicate information for better agricultural risk solutions either at the policy, market or farmer-level.

- ARC RiskView. Presenter: Federica Carfagna, African Risk Capacity (ARC)
- Remote Sensing as support for Agricultural Management: WRMIF and FAO-ASIS. Presenter: Laurent Tits, VITO
- Social protection as a tool for risk management and promotion of sustainable agriculture practices. Presenter: Natalia WinderRossi, FAO

Topic 4: Global holistic IS-ARM

Global holistic IS-ARM group consists of presenters from different areas of risk themes: market, diseases and weather that play a leading role at global level. Showcases in this group presented to the audience the possibilities to collect, maintain and disseminate comprehensive package of risk information in a holistic manner.

- Seasonal Monitor / Seasonal Explorer. Presenter: Rogerio Bonifacio, WFP
- Famine Early Warning Systems Network (FEWSNET). Presenter: Bruce Isaacson, FEWSNET/USAID
- Event Mobile Application (EMA-i) by FAO for animal disease reporting. Presenter: Fairouz Larfaoui, EMPRES/FAO

Topic 5: From Global market to Farmer gate

The idea behind this group was to understand how different levels of market information for risk management could reach users from government to farmers. It combined presenters of tools that work at the global, regional and country level.

- Agricultural Market Information Systems (AMIS). Presenters: Abdolreza Abbassian, Denis Drechsler and Mr. Philippe Paquotte, FAO
- Electronic platform to disseminate market information via SMS: YEGLE Platform. Presenter: Steven Jonckheere, PAFA-E/IFAD
- Regional Agricultural Trade Intelligence Network (RATIN). Presenter: Gerald Makau Masila, Eastern Africa Grain Council (EAGC)

Topic 6: Getting information from the crowd

To maintain reliable information, one requires credible and direct/point source for empirical facts about the happenings on the ground. Initiatives/tools in this group focused mainly on crowdsourcing. Presenters sought to showcase initiatives that are used in gathering, maintaining and processing direct information from sources and to disseminate the processed information to the receiving clients.

- Plantix by PEAT start-up. Presenters: Charlotte Schuhmann and Alexander Kennepohl, PEAT
- “Innovative food price collection methods in developing countries: approaching crowd-sourcing through new technologies in Africa. Experiences and lessons learned from a methodological study and a food price collection pilot”. Presenters: Gloria Solano Herмосilla, JRC; Gunter Zeug, Terranea; Conrad Bielski, EOXPLORE
- FARMIS. Presenter: James Nguo, Arid Lands Information Network

SESSION 4

Integration of information systems in decision-making: the way forward

The last panel was composed of representatives from institutions that play key role in agricultural development in Africa- WFP, IFAD, FAO, ARC, NEPAD, PAFO.

Discussions focused on efforts on the ground to integrate information into policy and for investments opportunities. Panelists brought out their examples, lessons and the way forward to improve information systems for agricultural risk management, in relation to fixing the accessibility gaps identified in the Session 1, the sustainability and financing for ARM-IS, increasing innovations for gathering and delivering information.

PAFO, continental farmer organization with five networks in Africa, highlighted the relevance and farmers' ownership of the information and the trust that farmers have towards their government.

The main challenge is managing the risks ex ante to avoid that risk become disasters or food crisis. A change in the mindset is required from managing crisis to managing risks. Decision makers like those in the panel, when they think and plan ahead, all is about risk management. The challenge is having the right information for thinking ahead and investment.

Farmers are risk manager by nature, but have not access to the best information. A main issue is to disseminate the information among farmers. Governments and development partners need to work together with farmers to make the data and information for ARM attractive and useful to the farmers, as they will pay for the information only if they have benefits to get this information.

There are several initiatives and projects to put into relation farmers and the research institute and universities to collect farmer field information. For instance, the SFOAP project is managed by farmers that need to exchange of experiences at the continental level. Creating or connecting with Big Data system with farmers can help to make information usable by different stakeholders (public sector, private sector, universities...).

There are enormous challenges of sustainability of information systems, accuracy of data and maintenance. Countries are users of information but they are not involved in collecting and processing the information. There is a Golden Triangle for information systems: Government-private sector-academics. It is possible to

build capacity and sustain the information if it's processed at the local level. There is a need to change the business model to sustain the system and financial partners should support this golden triangle of partnerships.

Closing remarks

The workshop was closed by Périn Saint Ange, the IFAD Associate Vice President.

He emphasized the remarkable close collaboration between different international organizations during the workshop, including, IFAD, FAO, WFP and World Bank, together with regional agencies such as NEPAD, ARC and Agrhyment and farmers organizations like PAFO, as well as private sector initiatives. The workshop has shown that information has no boundaries of topics or organizations and need to be shared in networks. It has served to begin a dialogue in favour of open information networks, between big and small initiatives, between experts on animal & plant diseases with experts on market prices & satellite information, because in the era of internet we are all part of the same information system. Farmers and decision makers need this information to manage agriculture risks and boost rural investment. This is an important contribution to the broader Inclusive rural transformation, main topic of the IFAD's flagship event that took place in 25-26 of January, where agricultural risk management was in the centre of the discussions. IFAD is proud of supporting the Platform for Agricultural Risk Management (PARM) with EU, AFD and Italian cooperation in strategic partnership with NEPAD.

Not all the information available in the market is good, therefore actions have to be taken to provide better information. The foundation pillar of risk management is information.

It was an honour for IFAD to host all the participants representing a wide range of organizations including the important engagement of the private sector. It was a privilege to gather all of this expertise to improve farmers access to information as agriculture remains a risky sector. This workshop was the beginning for continuous dialogue and partnership for better agriculture information and risk management.

Take-aways

by **Professor Jose Maria Sumpsi**

1. Why so intense information for Agricultural Risk Management (ARM) is needed:

- Different products (crops, fruit and olive trees. Vineyards, livestock...)
- Different types of risks and hazards (climate, market, health, policy and others)
- Different type of farming (familiar, commercial, small or large farms)
- Long time series of data to know the frequency and severity of hazards
- Being able to evaluate the impacts, socially, economically and environmentally
- Being able to perform forecasting

2. The information needed for ARM is context specific:

The context is defined in full along the dimensions identified in the previous point.

3. Key role of the new technologies and tools:

- ICT (markets, climate/meteorological, plant and animal production and health)
- Remote Sensing (early warning systems, index insurances)
- Big Data (Holistic approach combining different thematic blocks of information)

4. There are numerous and diverse information systems for ARM: international, regional, national, private and public IS

As an example, in Ethiopia 103 information systems on seven thematic blocks were found: 39 national, 15 regional and 49 international. Just in the thematic block on price and markets 22 information systems, not always complementary, were found: 11 national, 5 regional and 6 international.

The harmonization and coordination of the existing Information systems within the different thematic blocks is a key element for ensuring that all these elements of information and the systems supporting it enable feasible and useful ARM.

5. The main requirements of information for ARM are:

Standardization, disaggregation and tailored according to the needs of the users, including the dissemination means, the format and the language.

6. Accessibility of Information Systems:

Is a very important issue but the severity is different depending on the nature of users: policy makers, public institutions, experts from universities and research centers, banks and insurance companies and value chain actors. The problem of accessibility is particularly severe in the case of farmers in remote and poor rural areas. We may distinguish three types of accessibility problems:

- i. Limited openness of some information systems and sources due to:
 - legal regulations on confidentiality
 - information available in public offices but not disseminated
 - payment to access to the information
- ii. Limited dissemination of information systems and sources due to:
 - difficulties to disseminate in local languages
 - lack of connectivity in rural areas to access to IS websites
 - websites not working properly
 - very limited amount of information can be disseminated through radio and sms
 - radio and sms are good for early warning due to its high coverage
 - limited coverage of farmers organizations
 - limited coverage of public administration offices in rural areas
 - difficulties to read bulletins
 - problems to understand and interpret full and elaborated information

7. Sustainability

In the case of public information systems the sustainability will depend on public budget allocations and donor contributions.

In the case of private information systems the sustainability will depend on the willingness to pay from users (farmers and other actors of the food chain, banks, insurance companies, dealers, others)

- Willingness to pay in turn will depend on benefit for users from the information
- The information should be embedded in broader services (marketing, dealers, technical assistance) to facilitate sustainability
- The regional approach (regional networks IS) may contribute to sustainability

8. Importance of farmers participation, either individually or through farmers organizations to:

- define the needs of farmers information
- establish the best way to disseminate the information to the farmers
- participate in the governance of information systems
- provide valuable information for IS through crowd sourcing schemes
- build capacity to allow farmers to interpret and digest the information

9. The Holistic approach is one way forward to improve the information for ARM:

The Holistic approach is based on the articulation/combination of the different type of information systems and sources (public, private, international, regional and national), the different thematic blocks of information and the different technologies and tools for collecting (surveys, networks of qualified informants, remote sensing, crowd-sourcing and others) and disseminating (cell phones-sms, websites, radio, TV, bulletins, farmer organizations, local offices from governments). Big data can be a useful tool for the holistic approach. The optimal combination of different technologies and tools will depend on the kind of information (short early warning messages or long time series of data) and is context specific.

10. There is a great deal of innovations on information systems for ARM:

Eighteen innovations were presented in Session 3 covering very diverse and good initiatives on e.g. Big Data (MUIIS Uganda), private system offering information and broader services (FIRM Uganda), Pooling Insurances (African Risk), Social protection (FAO), Early warning for animal health (FAO-Empres), Regional price and market information (RATIN), African Food Price through crowd-sourcing (pilot project from JRC) and others. It would be good to have systematic information on that innovations to make a sound follow-up.



PARM
PLATFORM FOR
AGRICULTURAL RISK
MANAGEMENT

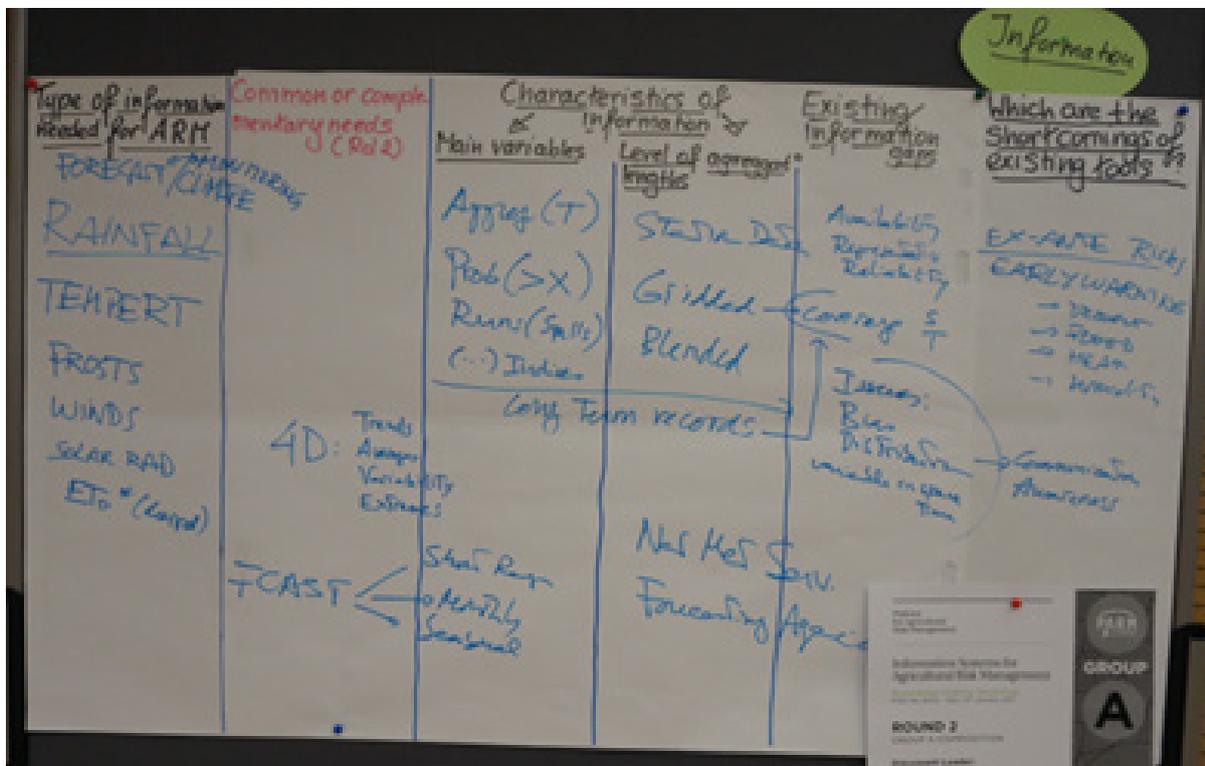


Annexes

Annex 1: Findings of Session 2: WorlCafé Group Discussions

Thematic block 1: Meteorological and climate information

Working Group 1.1: Characteristics of ARM information and how it is collected/Common needs and complementarities



Working Group 1.2: Accessibility issues and tools/Convergence into single tools

Main information accessibility challenges for ARM	Common challenges in access to information for ARM	Existing initiatives + institutional frameworks for increasing access to information for stakeholders (Policy makers, market players, farmers)	Innovative tools helpful for information dissemination → looking forwards
<p>RAINFALL, TEMPERATURES, LOWERS, DROUGHTS</p> <p>② Gaps and quality issues in climate/weather information</p> <p>③ Gaps in building & disseminating info</p> <p>④ Difficulties in access to com/tech info of interested areas, type of user & language of literacy</p> <p>⑤ Inequity of indigenous knowledge</p> <p>⑥ Lack of channels of dissemination</p> <p>⑦ Lack of frequency info</p> <p>⑧ Lack of channels of dissemination</p>	<p>- Construction across different stakeholder groups</p> <p>- Capacity of info users (farmers)</p> <p>- How to reach (Hard to reach remote areas)</p> <p>- Understanding user demands (Information type, context, format)</p> <p>- Timeliness of information (providing when it's needed on time)</p> <p>- Quantity of data (mixed sources)</p> <p>- Capacity of data processing</p>	<p>- Data Production</p> <p>- CHIRPS, Météo France, Satellite based + Weather station info</p> <p>- ASIS - Satellite based info - DTH</p> <p>- Openplan CM4Eh Crop Monitor for Early Warning</p> <p>- GDDAN, agribase</p> <p>- Open Data for Agriculture and Nutrition</p> <p>- Data Dissemination</p> <p>- Through Mobile: Red Cross (TEFA), Private (M-Farm), Through Radio: Farm Radio Intl.</p>	<p><u>Need for Early Warning Info</u></p> <p>or delayed onset (for sowing, planting)</p> <p><u>Focusing at</u></p> <p>- Min/Agri/LOCAL extension</p> <p>- Farmer Organisations</p> <p>- Info → Farmers</p>

Thematic block 2: Market and price information

Working Group 2.1: Characteristics of ARM information and how it is collected/ Common needs and complementarities

Type of information needed for ARM	Common or Complementary information needs	Characteristics of information needed	Existing information gaps	Shortcomings of existing tools for information gathering
<p>Which products what prices?</p> <p>Returns:</p> <p>$P \times Q$</p>	<p>Costs on Production:</p> <ul style="list-style-type: none"> - Market Exp. - Planting - - Sample <p>Areas of information & data quality:</p> <p>Transport & Logistics factors</p> <p>Demand</p> <p>Settling Mts.</p>	<p>Main variables</p> <p>Price $A = 1$</p> <p>Price X</p> <p>Price $A + B$</p> <p>Cost of Production:</p> <ul style="list-style-type: none"> - Input - Labor <p>Market Size</p> <p>Gov. Policy</p> <p>Market Extension</p> <p>Trade Policy</p> <p>Tax/Policy</p>	<p>Plenty gaps</p> <p>Attribution</p> <p>↳ P. variability</p> <p>Access price variability</p>	<p>repeated</p> <p>SPD</p> <p>at hand. Cal.</p> <p>Underestimation of greater risks facing small farmers</p>

Working Group 2.2: Accessibility issues and tools/Convergence into single tools

Main information accessibility challenges for ARM	Common challenges in access to information for ARM	Existing initiatives & institutional frameworks for enhancing access to information for stakeholders (policy makers, market players, farmers)	Innovative tools helpful for information dissemination → looking forwards
<p>Make info accessible to farmers</p> <p>Open / periodic access - limited</p> <p>Relevancy of info</p> <ul style="list-style-type: none"> Timely Analyzed <p>Understanding of info</p> <p>Timely / Packaging</p> <p>Technology</p> <p>Language / Literacy</p> <p>Embedding in business model support (training, coop, advisory)</p>	<p>X</p> <p>- X -</p> <p>No web</p> <p>Need of training with cell phones</p>	<p>Local entities</p> <p>FBO MIS</p>	<p>FIT/Ug.</p> <p>Prod Info Advisor</p> <ul style="list-style-type: none"> - collect/upload info <p>Dissemination = radio, news, paper, call, phone, etc.</p> <p>+ Desk keeping (400)</p> <p>Prices provided by buyers (ZIFU/Samburu, Free Base/Malawi)</p> <p>Link with (commercial) extension.</p> <p>FERT/Marketing (price + TK + advice)</p> <p>FIT/Ug (combine with with Samburu, Tanzania)</p>

Annex 2: List of Initiatives

ROUND 1

1.1 Holistic IS-ARM at country-level

Agri Risk Analyzer

Presenter: Jaime ter Linden, FIRM

Agri Risk Analyzer is a tool that collates FIRM-Infotrade data to analyse the risk exposure of farmers, including systematic risks like weather related, market related and pest/disease risks. The output information provides comprehensive farmer profile, including a risk profile and transaction data, which is shared with financial institutions, insurance companies, extension services and NGOs, working with farmers in areas such as improved seeds, irrigation equipment, social protection and others. For instance, the tool calculates the ROI of risk mitigation (like irrigation) to support farmers' and bankers' decisions on how to apply their funds.

Market-led, User-owned ICT4Ag-enabled Information Service (MUIIS), Uganda

Presenter: Benjamin Kwasi Addom, CTA

MUIIS is an innovative, demand-driven, market-led, and user-owned approach that uses satellite information to provide extension and advisory service on weather forecasting, crop management and financial services to crop farmers in Uganda. The bundled information products are expected to reach over 350, 000 maize, soya bean and sesame farmers in Central, Eastern, Northern, and Western Uganda. The main distribution channels are the Ensibuuko's Mobile Banking and Information Software (MOBIS), in collaboration with Mercy Corps. The platform is being supported by about 200 ground agents (farmer leaders) equipped with smartphones loaded with content. Revenue streams will include subscriptions by groups (via farmer organisations), third party international development partners, and individual farmers; farmer profiling; sale of data products; data collection; index-based insurance.

Plantwise by CABI

Presenter: Dannie Romney and Roger Day, CABI

Plantwise is a CABI-led global programme, introduced to 34 countries worldwide. The Plantwise approach is a framework for action aims to build the capacity of agricultural institutions and organisations to strengthen plant health systems. This is achieved by establishing sustainable networks of local plant clinics, run by trained plant doctors, where farmers can find practical plant health advice. Plant clinics are reinforced by key stakeholders, such as diagnostic experts and researchers, as well as by the Plantwise knowledge bank, a gateway to plant health information, including diagnostic resources, pest management advice and front-line pest data. ICT tools are integrated into the PW approach to facilitate data collection and management, support social networking and diagnosis, improve access to information and support plant doctor development. The approach links advisory services on the ground to digital data and information exchange to inform pest risk management actions.

1.2 Beyond Climate

GEOGLAM Crop Monitor for Early Warning

Presenter: Michael Deshayes, GEOGLAM

The GEOGLAM Crop Monitor for Early Warning (CM4EW) builds on the successful Crop Monitor

for the G20 AMIS to monitor and produce subnational crop assessments for a number of national and regional agencies. The output assessments are based on remotely sensed and meteorological data, ground-based observations, model outputs and expert analysis on crop growth and conditions throughout the season. Output information communicated through monthly bulletin which reflects an international consensus. CM4EW bulletin currently presents information on about 80 countries.

PremiseData

Presenter: Paolo Lucchino, Premise

Premise Data provides an integrated data collection and analysis platform designed to support and streamline decisional processes. The core components of the Premise platform are: (1) mobile data collection system that empowers a distributed network of local staff and partners to submit data from the field in a structured manner, (2) Central architecture to integrate and analyse multiple data streams in real-time, and drive food security, agricultural risk assessments and forecasts, and (3) rapid and dynamic early warning dissemination platform. By allowing for multi-tiered user groups, trigger events and configurable rules, the platform streamlines the clearance and distribution of alerts and information to stakeholders at all levels through mobile phones.

The platform can collect data on farm production levels and on price dynamics across the chain - from farm-gate to wholesale and retail levels. Premise can expose supply chain bottlenecks and generate timely, accurate and efficient early warning of food price and/or scarcity at the market-level. By combining this streaming data with meteorological, remote-sensing and other secondary data sources, the platform can provide live assessments of current and future food insecurity risk at a granular geographic level, and drive decisions on how and when to escalate alerts and/or the appropriate modality of intervention.

ECOWAS Agriculture Regional Integrated Information System (ECOAGRIS)

Presenter: Moussa Mama, Centre Regional AGRHYMET

ECO-AGRIS is a regional information platform to manage the food crisis in the Sahel and West Africa through twelve sub-systems including early warning, inputs, livestock, natural resources and climate, food security stock, agro-weather and disaster risk management. The ECOAGRIS also provides information that permit to trigger the food security regional reserve and an integrated regional platform in the 17 CILSS / ECOWAS countries and the Intergovernmental Organizations (ECOWAS, UEMOA, CILSS), and regional partners (Save the Children, Oxfam, RESIMAO, RESAACK, RESOGEST, FEG, Africa rice , Networks of Peasant Organization, etc.);

1.3 From Insurance to Social Protection

ARC RiskView

Presenter: Federica Carfagna, African Risk Capacity (ARC)

The African Risk Capacity (ARC) is a specialised agency of the African Union that leads a development finance to provide financial tools and infrastructure for countries to manage/adapt and respond to natural disaster risks. ARC has a ground-breaking weather insurance tool - ARC RiskView (ARV) - designed to help African countries to pool their natural disasters risk and transfer it to the international market. The ARV is software, which enables the ARC to analyse disaster occurrences, impact on population, resilience, and insurance pay out to participating countries, mainly through technical support from the WFP. It enhances timely estimations of the impact of disasters on vulnerable populations and allows for quicker estimation of costs required to respond before a season begins.

Remote Sensing as support for Agricultural Management: WRMIF and FAO-ASIS

Presenter: Laurent Tits, VITO

Over the past decades Remote Sensing has been used for agricultural monitoring and management. Since the late 1990s, VITO works to monitor agriculture sector activities, through remote sensing projects of the EC-JRC. Major projects are the FAO-ASIS, FAO-FRAME, BELSPO-IPOT, and WRMF-insurance projects to monitor global and national drought, water use efficiency, yield in Africa and

many regions. Particularly in the case of the Weather Risk Management Facility (WRMF) index insurance project, it tests different remote sensing products as a basis for index insurance in Senegal. The WRMF index insurance project addresses information gap and scaling up constraint for index insurance. It based on extensive research works, development and tests of seven innovative remote sensing technologies to improve index insurance products. The project is currently piloted in Senegal, where seasonal field monitoring of crops is conducted in three identified Regions of Interest (ROIs) to help analyse performances. Monitoring is also supplemented by official government yield statistics starting from the year 2002.

Social protection as a tool for risk management and promotion of sustainable agriculture practices

Presenter: Natalia WinderRossi, FAO

FAO recognizes social protection's role in prevention: minimizing coping negative strategies, while strengthening resilience capacity at national, subnational and community levels; response: protecting the loss of agriculture assets while mitigating the negative impacts of crises; and promotion: facilitating investments in innovative solutions promoting sustainable agricultural practices. The organisation is supporting national states in building risk-informed and shock-responsive social protection systems through different delivery mechanisms, bringing together evidence generation ("From Protection to Production project"), policy dialogue, direct implementation of innovative approaches, south-south cooperation and capacity development using interactive tools and peer-to-peer learning.

ROUND 2

2.1 Global Holistic IS-ARM

Seasonal Monitor / Seasonal Explorer

Presenter: Rogerio Bonifacio, WFP

Seasonal Monitor and Seasonal Explorer are two components of WFP's Early Warning system. They both provide global level indicative data, analytical narratives and scenarios on growing seasons. For instance, in times of disaster such as drought, these tools provide food security implications. Information considered include: climate averages, longer term trends and inter-annual variability, specifically to support for the WFP and IFAD's food security analysis. Innovativeness of these tools lies in the large volumes of raw data that are assimilated, digested and made available for easy use diverse platforms. They also have long term record, near global coverage and fine level of geographic detail.

Famine Early Warning Systems Network (FEWSNET)

Presenter: Bruce Isaacson, FEWSNET/USAID

FEWS NET was created in 1985 by the USAID after devastating famines in East and West Africa to assist government, decision-makers and relief agencies in planning and responding to humanitarian crises through evidence-based analysis. At the moment FEWSNET is one of the leading provider of early warning and analysis on acute food insecurity. Products published on FEWSNET our website, include: monthly reports and maps detailing current and projected food insecurity, timely alerts on emerging or likely crises, and specialized reports on weather and climate, markets and trade, agricultural production, livelihoods, nutrition, and food assistance. Information contained in these products are weather forecasts and seasonal outlooks highlighting trends, hazards, and anomalies, as well as geospatial data and mapping related to vegetation, rainfall, and water use. FEWS NET relies on credible information sources for its systems: it synthesizes and collates its data from climate, weather, and crop production information provided by the National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), US Department of Agriculture (USDA), and US Geological Survey (USGS).

Event Mobile Application (EMA-i) by FAO for animal disease reporting**Presenter:** Fairouz Larfaoui, EMPRES/FAO

EMA-i is a mobile application developed by FAO for data collection and to facilitate real-time disease reporting to support veterinary services capacities in disease surveillance and early warning at country level. The purpose of this digital tool is to improve the timing and quality of disease reporting from the field to central government. Epidemiological information on animal diseases is collected with EMA-i app from the field. These data are sent in real-time to the FAO's Global Animal Disease Information System (EMPRES-i) database. In addition, through EMA-i/EMPRES-i, an early warning notification system is in place for informing users and decision makers on a disease event. EMA-i has been implemented at country level in target districts in Uganda (since 2013), Mali (2015), Zanzibar, United Republic of Tanzania (2016) where it has clearly demonstrated major improvements in disease reporting and communication (i.e. from monthly to real-time) from targeted districts and will be extended to other regions and countries to enhance global capacities in disease reporting, surveillance and early warning.

2.2 From Global Market to Farmers' Gate

Agricultural Market Information Systems (AMIS)**Presenter:** Abdolreza Abbassian, Denis Drechsler and Mr. Philippe Paquotte, FAO

Hosted at the FAO, AMIS is an inter-agency platform for food market transparency and food security policy response. It was launched in 2011 by the G20 Ministers of Agriculture following the global food price hikes in 2007/08 and 2010. Some of the important aspects of the AMIS platform are the market monitor, indicator and database components providing relevant information on four of the world's major commodities; wheat, soya beans, maize and rice. The market monitor component provides synopsis of the major development in international commodity market including the demand and supply, crop monitoring, international prices, policy development and fertilizer outlook. Indicative changes of commodities as well as signal policy actions and stock regimes of the commodities are also provided through the indicator component. The database component however provides a statistical glance to the production, supply, utilization, trade and closing stocks of commodities for some countries. An interesting feature about the AMIS is that it gathers information on both international trade and domestic measures. The design of the database also allows for comparisons across different countries, commodities and policies for selected periods of time.

Electronic platform to disseminate market information via SMS: YEGLE Platform**Presenter:** Sémou Diouf, PAFA-E/IFAD

Small-scale farmers in the Senegal groundnut basin have limited access to, and understanding of market and rainfall forecast information. This situation limits their capacity to bargain with market operators and to take well informed decision to properly manage their agricultural activities. To facilitate the access to market and weather information, the Agricultural Value Chain Support Project (PAFA), has therefore supported the setting up of an electronic platform, called YEGLE. The platform is managed by the inter-professional value chain committees who send SMSs to all value chain actors with information about prices, inputs, stocks and the weather conditions. The meteorological services share the rainfall forecasts with the inter-professional value chain committees and the extension services. Afterwards a working group, composed of facilitators selected within the producer organisations (POs) and the extension services, provides the agronomic interpretation and disseminates the information to the farmers. Concerning the information on prevailing market prices, the contact persons selected by the POs, collect the price information from different reference markets and forward the information to the inter-professional value chain committees. In fact the Platform disseminates the information to all stakeholders (committee members, producers' organisations, producers, market operators, and partners) via SMS.

Regional Agricultural Trade Intelligence Network (RATIN)**Presenter:** Gerald Makau Masila, Eastern Africa Grain Council (EAGC)

EAGC-RATIN is a Market Information System covering 8 countries in the Eastern Africa region. It provides market prices (spot markets wholesale and retail) and cross border trade flows and volumes for selected grain and cereals commodities. EAGC RATIN has a network of market and border

monitors who observe the market prices and cross border volumes and submit the data through a mobile application to the RATIN server where the information is processed and disseminated to members and stakeholders through a web portal and mobile SMS system. Daily, weekly and monthly reports are generated and distributed to subscribers. Historical data is also provided to interested persons on sale as data set bundles, or as live feeds. The users of RATIN include farmers and farmer groups, grain traders, processors and millers and government officials for policy and regulatory purposes, bankers/financial services providers for valuation of warehoused commodities for credit processing purposes. Detailed information about the initiative and services is available at www.ratin.net.

2.3 Getting Information from the Crowd

Plantix by PEAT start-up

Presenter: Charlotte Schuhmann and Alexander Kennepohl, PEAT

PEAT is a start-up that supports agroecology, big data and artificial intelligence for the automatic recognition of plant diseases developed algorithms which are able to automatically identify plant damages based on a photo bringing the benefits of smart agriculture to billions of farmers worldwide. PEAT's Plantix application is a tool that supports smallholder farmers with plant diseases and pests control management. It is a simple diagnostic and monitoring tool for plant diseases, based on smart and self-learning algorithms that automatically identify plant damages on a photo. The tool is currently in use in Germany, Austria, Switzerland, and there is a plan to rollout in India by April.

“Innovative food price collection methods in developing countries: approaching crowdsourcing through new technologies in Africa. Experiences and lessons learned from a methodological study and a food price collection pilot”

Presenters: Gloria Solano Hermosilla, JRC; Gunter Zeug, Terranea; Conrad Bielski, EOXPLORE

The presentation is based on a study titled “Innovative food price collection methods in developing countries: approaching crowdsourcing through new technologies in Africa. Experiences and lessons learned from a methodological study and a food price collection pilot”.

Food prices are a key indicator of changes in food supply and demand, as they signal the availability and affordability of food. They are, therefore, key determinants of households' access to food and especially important in countries where people spend a high proportion of income on food. In contrast to developed countries, where food price data are often captured comprehensively, frequently and accurately, in many less developed countries, especially in Africa and remote and food insecure areas, timely and accurate food price data are sparse.

New mobile technologies and crowdsourcing, which uses contributions from citizens (“crowd”) to gather different types of data, are increasingly researched as a means of obtaining timely, frequent and accurate information. The methodological study provides a literature review on a relatively new and booming concept, crowdsourcing through new technologies in developing countries and an overview and insights in previous and current initiatives of innovative food price collection in developing countries. The food price collection activity implemented in several African countries contributed to the development of an innovative method for data collection. Main learnings had to do with the identification of challenges and implementation of adequate solutions where possible.

FARMIS

Presenter: James Nguo, Arid Lands Information Network

FARMIS is a record keeping system that enables farmers to become professional and systematic in archiving information they need when engaging with financial institutions, input and other service providers. It tracks farm operations and identifies gaps in knowledge or practice, using ICTs for data management and engages youth to drive agriculture transformation. The FARMIS is more innovative in helping maintain accurate production, marketing and operational data in agriculture: it enhances information required to access to finance and other services, and guides decision-making for optimal production.

Annex 3: List of Participants

1. AFD	Philippe Roudier
2. AGHRYMET	Moussa Mama
3. AGRINATURA	Hélène David-Benz
4. ARC	Tuga Alaskary
5. ARC	Federica Carfagna
6. Arid Lands Information Network (ALIN)	James Nguo
7. CABI	Dannie Romney
8. CABI	Roger Day
9. CARGILL	Elizabeth Fay
10. CEIGRAM	Alberto Garrido
11. CEIGRAM	José Maria Sumpsi
12. CGIAR	Jawoo Koo, IFPRI
13. COMESA	Thierry Kalonji
14. Consultant	Agnes Atyang
15. CTA	Ben Addom
16. CTA	Chris Addison
17. EAGC (RATIN)	Gerald Masila
18. EOXPLORE	Conrad Bielski
19. FAO	Rob Vos
20. FAO	Abdolreza Abbassian
21. FAO	Fairouz Larfaoui
22. FAO	Hideki Kanamaru
23. FAO	Nguyen Hanh
24. FAO	Denis Drechsler
25. FAO	Philippe Paquotte
26. FAO	Natalia Winder Rossi
27. FAO	Solomon Asfaw
28. FAO	Federico Spano
29. FAO	Ana Ocampo
30. FAO	Sophie VonLoeben
31. FEWSNET	Bruce Isaacson
32. FIRM/AgriRisk Analyzer	Jaime ter Linden
33. GEOGLAM	Michel Deshayes
34. IFAD	Perin Saint Ange
35. IFAD	Adolfo Brizzi
36. IFAD	Paul Winter
37. IFAD	Michael Hamp
38. IFAD	Paxina Chileshe
	Steven Jonckheere

39. IFAD/PAFA	Christa Ketting
40. IFAD	Enrique Hennings
41. IFAD	Andrea Di Vecchia
42. Italian Cooperation	Vieri Tarchiani
43. Italian Cooperation	Sylvia Nicoli
44. Ministry of Agric (Ita)	Elisabetta Lanzellotto
45. Ministry of Agric (Ita)	Francois Kayitakire
46. JRC/EU	Gloria Solano
47. JRC/EU	Alexa Mayer-Bosse
48. MUNICH RE	Mariam Soumare
49. NEPAD	Jean-Jacques Soula
50. OIE	Fatma Ben Rejeb
51. PAFO	Charlotte Schumann
52. PEAT	Alexander Kennepohl
53. PEAT	Paolo Lucchino
54. PREMISE	Gunter Zeug
55. Terranea	Fabrizio Moscatelli
56. USAID	Laurent Tits
57. VITO	Bing Zhao
58. WFP	Rogério Bonificatio
59. WFP	Tobias Flaeming
60. WFP	Carlos Arce
61. World Bank	

PARM Secretariat

Jesús Antón	Programme Manager
Massimo Giovanola	Technical Specialist
Karima Cherif	Knowledge Manager Officer
Imaine Abada	Country Events Technical Support
Ilaria Tedesco	Capacity Development Specialist
Balikisu Osman	Intern
Ute Eberhardt	Workshop Facilitator



Contacts

PARM Secretariat

**International Fund
for Agricultural Development (IFAD)**

📍 Via Paolo di Dono 44 - 00142 Rome (Italy)

✉️ parm@ifad.org

🌐 www.p4arm.org

🐦 [@parminfo](https://twitter.com/parminfo)