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Innovative approaches to linking sustainable and agro-ecological production with markets in developing countries: a researcher-practitioner workshop. Final report.

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INNOVATIVE APPROACHES to linking sustainable and agroecological production with markets in developing countries

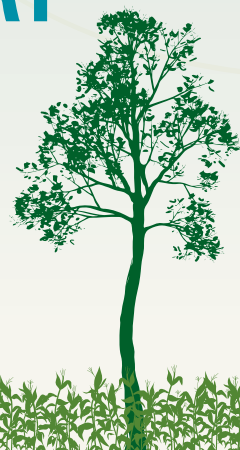
A Researcher-Practitioner
Workshop

23/25
JUNIO
/JUNE
2015

FONDO DE CULTURA
ECONÓMICA

Centro Cultural Gabriel García Márquez
Calle 11 # 5-60, Bogotá, Colombia

FINAL REPORT



INNOVATIVE APPROACHES

to linking sustainable and agroecological production with
markets in developing countries

A Researcher-Practitioner Workshop

FINAL REPORT

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Prologue

Producing more with less by increasing resources use efficiency, managing ecological, social and economic risks, and improving ecosystem services is the core concept of FAO paradigm for sustainable intensification of agricultural production (FAO, 2011).. The transition from a food system focused on maximizing agricultural production to one of more sustainable agriculture requires research and innovation. Several studies carried out over the past few years have shown that there already exist sustainable agricultural practices that satisfy the principles of sustainable agriculture. FAO particularly encourages practices that reduce the use of synthetic pesticides through integrated pest management (IPM). FAO also promotes agroecological practices that contribute to the development of sustainable food systems, in particular for traditional and family farm systems (FAO, 2015).

These and other ecological agricultural practices have been spreading slowly, often stimulated by voluntary sustainability standards. However, a sustainable and inclusive food system demands analysis not only of agronomic practices but also of the ways in which these practices respond to market signals. A range of innovations has emerged in developing countries associated with business models, re-organization of value chains, more favourable institutional environments, and support services for farmers. These innovations, through the creation of new commercial practices that value the quality and sustainability of food products, encourage producers to increase sustainable agricultural production and improve the supply of sustainable goods to local consumers.

This workshop is the result of two research projects: the first, on “Sustainable practices, sustainable markets? Exploring the institutional changes that link sustainable agricultural practices with markets in developing countries” and the second, on “An analysis of the marketing channels of agroecological produce.” Both projects attempted specifically to understand the ways in which sustainable agroecological production was linked to markets in developing countries. The workshop brought together specialists and researchers who shared innovative experiences about more productive and sustainable agricultural practices in the context of market integration. It is hoped that the experiences documented in the present workshop report will facilitate the spread of new experiences and create new awareness about the linkages between sustainable production and markets, contributing to the development of sustainable and efficient food systems.

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The authors wish to express their thanks for the support and invaluable contributions to the workshop of the FAO representation in Colombia. Special thanks go to the members of the local Steering Committee for their enthusiasm in ensuring the success of the event. Thanks are also due to the Family Farm Network for organizing the field trips to producers and the visits to marketing channels and restaurants. The authors are also grateful to the organizing committees and the scientific committees of the two research projects and the French National Institute for Agricultural Research (INRA) for their contributions, and to the International Federation of Organic Agriculture Movements (IFOAM) and the Slow Food Foundation for their participation in the event. Sincere thanks go to the presenters, participants and specialists who have contributed to the success of this workshop.

The authors would also like to thank, by name, the financing mechanisms that supported this workshop. This workshop was financed by activities under FAO's normative programme that contributes to the achievement of the Organization's Strategic Objective (4) to 'Promote inclusive and effective agricultural and food systems', the European Union through the "Improved Global Governance for Hunger Reduction Programme"., and a partnership between FAO and INRA under the project 'An analysis of diversified and sustainable market channels for agroecology.' The study on institutional innovations that formed the basis of the workshop also received financial support from the European Union through its Seventh Framework Programme for research, technological development and demonstration under grant agreement no 321427 for the project entitled "Responsible Research and Innovation in a Distributed Anticipatory Governance Frame. A Constructive Socio-normative Approach" (Res-AGorA).

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Workshop Description

This workshop was a joint initiative of the Plant Protection and Production Division (AGP) and the Rural Infrastructure and Agro-Industries Division (AGS) of The Food and Agriculture Organization of the United Nations (FAO) and the National Institute for Agricultural Research (INRA) of France. The workshop combined the findings of two synergistic projects:

- In 2013, AGP-AGS-INRA launched an open competitive tender on innovations that linked sustainable agricultural practices with markets in developing countries. Fifteen case studies from all over the world (four from Latin America and the Caribbean, six from Africa and five from Asia and the Pacific) were selected and developed in 2014. A meta-analysis was carried-out using these case studies to demonstrate how institutional innovations create links between sustainable agriculture and local markets. The results of the analysis will be published in book form in 2016.
- Beginning in 2015 as a joint project between AGS and INRA, which capitalizes on the work of the first project, is collecting more systematized data of the key components of market construction so to analyze the opportunities and challenges of creating sustainable market linkages. A case study methodology is used to collect data from 6 of the cases on agro-ecology systems that were involved in the first study, three from experiences carried out with the help of Slow Food International and three additional cases that fill in geographic and farming system gaps in the existing range of experiences. The data compiled will provide the answer to the following research question: What market practices are best adapted to agroecological production systems, and how can they be scaled up?

Through these two projects, it became apparent that there are a wealth of experiences about sustainable practices and linkages to markets that are occurring under the radar all across the world. This workshop is a way to create visibility for these experiences and to work towards strengthening the already existing work through future collaboration.

The workshop brought together researchers and specialists to:

1. Share experiences on how to create diversified markets for sustainable products in developing countries;
2. Identify lessons to initiate a practitioners' guide on building market linkages for sustainable products;
3. Identify capacity building and research needs of practitioners.

Participation in the workshop was by invitation only. There were more than fifty specialists and researchers in attendance, representing civil society organizations, the private sector, government institutions, academia and development agencies in Africa, Asia and the Pacific, Europe, Latin America and the Caribbean and the Near East. A total of 56 researchers and specialists from 21 countries participated in the workshop (see Figure 1).

Figure 1: Case study countries



Contents of the workshop report

The workshop report contains a summary of each presentation and practical activity, the list of participants, and the biographies of the presenters and panellists.

The PowerPoint presentations can be found [online] at the following site:

<https://dgroups.org/fao/iilspm>

Steering Committee

Marc Barbier, Laboratory for Interdisciplinary Studies on Science, Innovation and Society (LISIS), French National Institute for Agricultural Research (INRA)

Allison Loonto, Laboratory for Interdisciplinary Studies on Science, Innovation and Society (LISIS), French National Institute for Agricultural Research (INRA) & Rural Infrastructure and Agro-Industries Division (AGS), The Food and Agriculture Organization of the United Nations (FAO)

Anne-Sophie Poisot, Plant Protection and Production Division (AGP), The Food and Agriculture Organization of the United Nations (FAO)

Pilar Santacoloma, Subregional Office for Central America (SLM), The Food and Agriculture Organization of the United Nations (FAO)

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Marcello Vicovaro, Rural Infrastructure and Agro-Industries Division (AGS), The Food and Agriculture Organization of the United Nations (FAO)

Workshop report

Opening ceremony

Welcome address

Rafael Zavala Gómez del Campo, FAO Representative in Colombia, opened the international practitioner-researcher workshop. He observed that all the participants in the workshop were believers because they believed in and practiced an alternative system of agriculture, and they were dreamers because they dreamt that each successful new experience could be replicated and applied repeatedly, thereby creating applied public policy. The year 2014 was the Year of Family Farming, marking a change in awareness. It signalled a new era for policies in favour of family farming, making more imminent the capacity to replicate successful initiatives locally and nationally. The success of this process of change depended on three factors: the willingness of consumers to eat healthier food while taking cultural elements into consideration, the political will to promote this change, and the multi-sectoral nature of the actors involved in the change, that is, the joint participation of different stakeholders not only in the creation of public policies but also in academia through the inclusion of civil society organizations. Another step that has to be taken to advance this process of change is replacing individual compensatory subsidy schemes with more intelligent subsidies that support the inclusion of small producers in the marketplace and in local economic activities that address the public goods associated with agriculture. Mr. Zavala ended his speech by acknowledging the FAO-INRA steering committee whom he merited with generating greater interest in family farming and agroecology.

Pilar Santacoloma, agri-business economist from Rural Infrastructure and Agro-Industries Division (AGS) of the Subregional Office for Central America (SLM) of the Food and Agriculture Organization of the United Nations (FAO), and Allison Loconto, research officer from INRA, bid the participants welcome and expressed her appreciation for their enthusiasm and willingness to participate. Ms. Santacoloma explained that the workshop was not an isolated event but rather the culmination of a prolonged process that FAO had been conducting for several years since the global study on 'An analysis of the impact of voluntary standards on market access for small producers.' That study had showed that voluntary standards helped establish sustainable practices, even though this had been demonstrated in the focus on export markets and in developed countries in the north that were able to afford the certification costs that would be prohibitive for small producers in developing countries. The study also showed that the standards were successful in promoting sustainable practices when their application was supported by favorable local institutions. Another important forerunner to the workshop was the programme on 'Sustainable production and consumption' held jointly by FAO and the United Nations Environment Programme (UNEP). Based on that programme, a report was prepared that analyzed all of the FAO field projects that had a voluntary standards component. In this report, we arrived at the conclusion that there were innumerable practices around voluntary standards for sustainable agriculture that invariably lacked some element that would make them self-sustaining, one of them being system approaches to link the sustainable agriculture practices to the markets beyond certification. Ms. Loconto explained that it was precisely the need to study market linkages more closely that brought FAO and INRA together in 2013 to investigate 'Institutional innovations that link sustainable practices with markets' (in which fifteen cases of institutional innovation were studied). The study was funded by FAO, INRA, and the European Commission through its research programme on responsible innovation, and the European Union through its programme on 'Global governance to reduce hunger and promote food security.' Since the funds originated from programmes on governance mechanisms, the study focused on institutional innovation. Its objective was to understand the motivations and dynamics that would enable the adoption of sustainable practices, the ways through which market interactions, value chains and local institutions would be reorganized so to enable sustainable agriculture to take hold. Another precursor to the workshop presented by Ms. Santacoloma and Ms. Loconto was the 'Symposium on agroecology' held in late 2014. The symposium acknowledged agroecology as a science and as one of the tools used by FAO to support sustainable agriculture and small farmers. Finally, she mentioned the second FAO-INRA study as the

final background event leading up to the workshop. In view of the public attention and international interest in agroecology, another study was funded by FAO in 2015 in collaboration with INRA and Slow Food to understand how the logic of agroecology could be used as a rationale for the creation of sustainable markets. The study focused on collating data on the specific characteristics of markets for agroecological produce, the valuation of the produce, price negotiations, the business model, prospects for scaling up, and the perceptions of sustainability by different actors in the initiatives. A total of twelve cases were studied in all, where six were new and six were carried over from the study on institutional innovations.

Workshop objectives

Allison Loconto and Pilar Santacoloma explained the objectives for bringing researchers and practitioners together in the workshop:

1. To share new experiences of how practitioners created diversified markets for sustainable products in developing countries.
2. To identify lessons to initiate a practitioners' guide on building market linkages for sustainable products;
3. To identify capacity building and research needs of practitioners for promoting these initiatives.
4. To generate new ideas on ways of putting the process into practice in each participant's own organization.
5. To generate ideas on ways of transforming the theory into concrete action and policy measures.

Innovations in sustainable production

In this session, keynote speakers presented the status of sustainable agriculture in Colombia and the following two sessions consisted of presentations by the initiatives in several countries who were successful in creating awareness about sustainable agricultural practices.

Keynotes

Mario German Bonilla Romero, representing the Colombian organization AgroSolidaria, outlined the experiences of his organization over the past five years of promoting sustainable and socially-inclusive agriculture and handicrafts. The organizational structure of AgroSolidaria is a confederation in which farming families, processors, distributors and consumers are integrated into a formal market economy based on socio-economic principles and the establishment of rural-urban linkages. The base units of this agro-solidarity system are the family farms that are grouped together according to the products or services that each family has to offer. Each confederated group is organized into local divisions (there were 123 divisions in the 18 regions of Colombia), regional federations and the confederate structure at the national level. AgroSolidaria, apart from setting up fair trade channels for sustainable products, is engaged in educating farmers using technical expertise provided by the universities, as well as in creating awareness among youth and consumers about sustainable and solidarity products, thereby helping to form responsible consumers. AgroSolidaria is also involved in building a model of decentralized community financing that would guarantee a model of solidarity investment in the rural economy, and in lobbying for public policies that support small farmers.

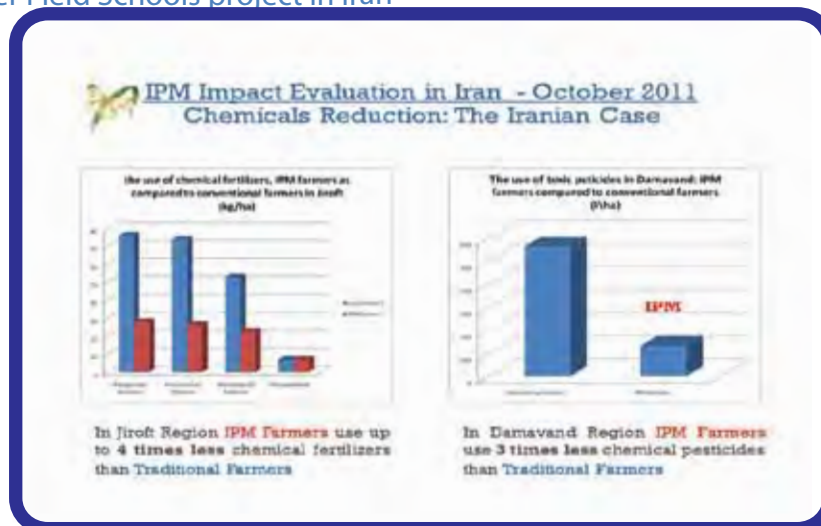
Jaime Aguirre, of the 'Earth Family' network in Colombia, pointed out that the concept of sustainable development needed to be updated based on the second law of thermodynamics, the law of entropy. According to that law, sustainable development is a low-entropy model of growth that takes the finite nature of resources and the processes of production of food and clean energy into consideration. This is why organic agriculture is the most relevant option at this stage in the history of human civilization, and can not be disassociated from family farming in developing countries. Organic family farming needs to ally itself with academics whose principles and foundations are rooted in ecological thinking with the aim of developing an organic agriculture that is based on science and highly energy-efficient. However, this will go nowhere without the support of the appropriate public policies that can provide the necessary and sufficient resources for research and ecological production. Mr. Aguirre argued that high-efficiency agroecology could not copy the model of transnational organic agriculture that created by industrial agriculture, in which the inputs of industrial agriculture were replaced one by one with biological inputs. Instead, agroecology must create its own model of agriculture; one that produces its own sustainable inputs and is born from the knowledge and experience of traditional peasant farmers and new ecologically trained farmers. Consequently, there must be a plan for rural ecological literacy to enable the production of sustainable fertilizers and inputs in a scientific manner by the farmers themselves on their own farms. Finally, he emphasized that the most important task for humankind over the next few decades will be the conservation of biodiversity: in today's world, producing food diversity constitutes the most valid strategy to help ecological family farming connect to markets, which are becoming more and more diversified and are always seeking new sources of nutrition. Therefore, the priority is to work for an 'eco-policy' that is local, national and global in nature, one that articulates standards for the preservation of food biodiversity, the protection of native seeds and the cessation of agricultural practices that are harmful to the environment.

Session 1: Knowledge creation - How do you create knowledge about sustainable inputs? *(facilitator: Pilar Santacoloma, FAO)*

Hossein Heidari, presented the Integrated Pest Management Project of the Farmer Field Schools (IPM/FFS) in Iran. He explained how the project that was started in 1999, thanks to the support of FAO, had managed to improve the ability of farmers to handle

pesticides (see Figure 2) by enabling them to reduce the use of agricultural chemicals – despite government subsidies that favour their use. The IPM/FFS project was able to adapt scientific knowledge to the local context efficiently by integrating traditional practices into training through farmer field schools, promoting the adoption of new technologies and reducing the use of pesticides.

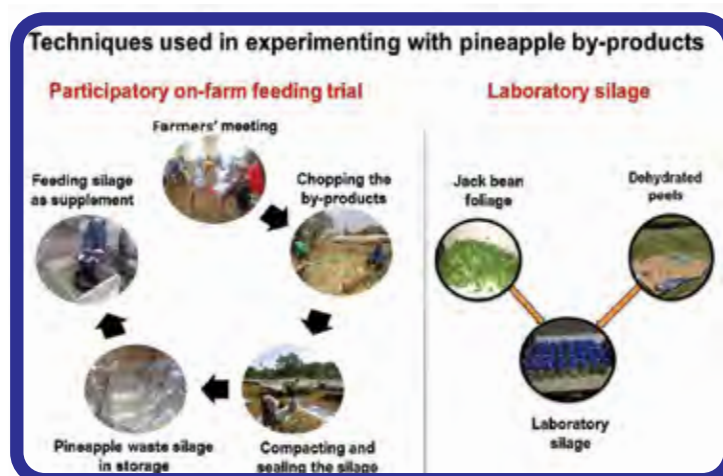
Figure 2: The impact of the Integrated Pest Management Farmer Field Schools project in Iran Farmer Field Schools project in Iran



Source: Heidari, "IPM Farmer Field Schools' Push-pull methods; The Case of Iran".

Muhammad Kiggundu of the University of Makerere in Uganda presented the ProGrOV (Productivity and growth in organic value chains) project developed jointly by the University of Makerere and the Kangu Lumira Area Cooperative Enterprise (KACE), a cooperative that specializes in the growth and processing of organic pineapples. The ProGrOV project, through a participative process, had identified two main challenges affecting local organic farmers in Uganda: (i) the disposal of the residues of pineapple processing and (ii) the incorporation of livestock into the production systems of organic agriculture and the issue of feeding the herd, particularly in the dry season. The ProGrOV project responded to these challenges by developing a technique that enabled the processing of pineapple by-products into livestock feed. The process consists of drying the pineapple processing residues, adding jack bean (*Canavalia ensiformis*) foliage and storing the mixture in silos (see Figure 3). The participatory nature of the process serves not only to identify and resolve a problem facing farmers, but also to overcome their scepticism about the possibility of using pineapple waste to feed their cattle.

Figure 3: Techniques used in experimentation with pineapple by-products



Source: Kiggundu, "Pineapple waste silage as a novel feed for dairy cattle under organic farming".

Kamana Breamer of the Kohala Centre in the Hawaiian Islands described the initiative being developed by the Centre to restore fishponds, the traditional method of fishing used by the indigenous peoples of the Islands that had been completely lost in the 1960s. The system consists of the reconstruction of traditional fishponds (to date, forty fishponds have been restored) in strategic sites on marine estuaries that guarantee the flow of fresh water into the ponds, allowing the proliferation of algae and thus making them conducive to the feeding habits of herbivorous fish. At high tide, the herbivorous fish would enter the pond from the ocean through narrow entryways. When they discovered it to be an abundant feeding habitat, the fish would remain in the pond and increase in size so that they would be unable to leave via the same openings through which they had entered. This system not only allows the conservation of the indigenous culture of the Hawaiian Islands but also improves the food security of Hawaiians, since currently 88% of their food is imported.

Figure 4: Mr. Breamer presenting the case study of the restoration of fishponds in Hawaii



Session 2: Knowledge sharing - How do you organize the sharing of knowledge about sustainable practices? (facilitator: Marc Barbier, INRA)

Filbert Kavia of the Njombe Outgrowers Service Company (NOSC) of Tanzania presented the example of a public-private partnership to address Rainforest Alliance certification in the tea sector (see Figure 5).

Figure 5: Public-private extension service partnership

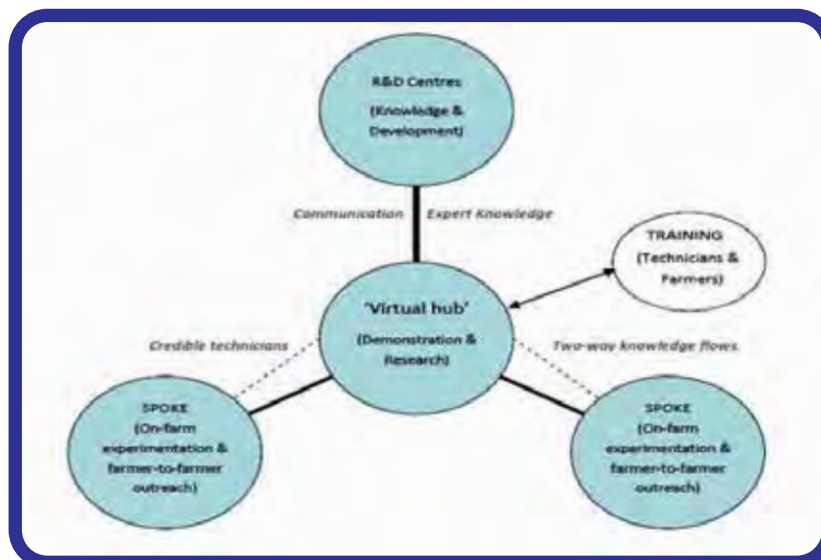


Source: Kavia, "Public private partnership on addressing RA certification in Tea sub sector in Tanzania".

There is an increasing demand by private-sector companies for certified tea, and the policies of public-sector agricultural institutions in Tanzania have been supporting this process. The challenge has been to convince tea producers to become certified. As a result, private companies (such as Unilever, Tata Global Beverage, Taylors of Harrogate and Twinings), together with the Tanzanian Smallholder Tea Development Agency (TSHTDA) and the Tea Research Institute of Tanzania (TRIT), developed—with Government support—extension services for tea producers. These take the form of field schools and Rainforest Alliance (RA) certification specific training. There is much yet to be done for the subsequent development of the tea sector, from the establishment of logistical and transportation services that would help reduce product losses to the introduction of specific courses on tea cultivation into the agricultural universities.

Hiswaty Hafid of the University of Sydney in Australia described the research and extension services programme proposed by the private sector to revitalize the cocoa sector on the island of Sulawesi in Indonesia. In the past, the cocoa sector was badly affected by both the massive and indiscriminate use of agrochemicals, which depleted the soils, and favored resistance of innumerable pests and diseases. In 2011, Mars Incorporated introduced an extension service for good agricultural practices to improve cocoa production on the island. The model developed for the extension programme was a 'hub and spoke' innovation model. In this model, the big cocoa buyers deal directly with the Cocoa Development Centres (CDC) that act as hubs of the model, reaching out and training experts (the 'Cocoa Doctors') on new technologies in cocoa production. In Sulawesi, the CDC are connected to and supported by the 'Cocoa Academy', financed directly by Mars Incorporated, which acts as a centralized training hub for good agricultural practices and business management. The CDCs train 'Cocoa Doctors' who spread the specialized knowledge learned in the CDCs and act as spokes in the system, interacting directly with the farming communities. In fact, each 'Cocoa Doctor' created a 'Village Cocoa Clinic' (VCC), a centre that offered extension and marketing services and supplied raw materials to village farmers. There is no unique business model established for the VCCs, and each VCC answers the specific needs of its community. In general, the 'hub and spoke' extension system is oriented towards agribusinesses that reinforce entrepreneurship in rural households, foments the creation of agricultural extension services within communities, and motivates farmers to adopt sustainable agricultural practices.

Figure 6: The 'hub and spoke' extension model



Source: Hafid, "Combined research-extension services for sustainable Indonesian cocoa sector".

Jonathan Atungwu of the Federal University of Agriculture of Abeokuta (FUNAAB) in Nigeria explained the ways in which the 'Community-Based Farming Scheme' (COBFAS) programme brought graduate agricultural students into contact with ongoing community farming practices in Nigeria. Students in this programme spend time in

farming communities learning how farmers work, gaining an understanding of the socioeconomic system of the community in which the farmers live and becoming familiar with their circumstances. The objective of the programme is to produce highly qualified farmers who can bring progress to the rural economies in Nigeria through sustainable farming and food security (see Figure 7). The development of entrepreneurial skills would enable jobs to be created and satisfy the needs of rural communities.

Figure 7: Achievements of the COBFAS programme



Source: Atungwu, "Strengthening institutional capacity and talents for community based organic agriculture education and entrepreneurship".

Participatory Guarantee System (PGS) simulation

(farm visit)

The Colombian Earth Family Network (Familia de la Tierra) took the workshop participants to visit Mr. Jaime Aguirre's 'Utopia' farm, where the Participatory Guarantee System (PGS) peer review carried out by the Network was demonstrated to them. The visit provided a good opportunity to gain a better understanding of the sustainable agricultural practices implemented by the Network, such as the production and breeding of effective microorganisms and the use of basalt rock dust to enrich the soils. Some of the chefs who collaborated with Earth Family prepared indigenous potatoes produced on the farm for taste testing, discussed the relationships and connections that chefs must establish with farms if they wanted to gain access to high quality produce. Finally, there was a discussion with the workshop participants about the day's experience, and one high school student told the story of how she was collaborating with the Earth Family Network to establish agroecology education for youth at her school.

Figure 8: The visit to Utopia farm



Innovations in market linkages

The most significant innovations in the marketing of sustainable products were presented in this session. The first session focused on Participatory Guarantee Systems (PGS) as the new schemes for creating market linkages that generated both guarantees to consumers and ways of recognizing the value of sustainable produce, such as festivals of sustainable produce, advertising on media channels, solidarity box-schemes, ethical and place of origin labels, agro-tourism, and Internet platforms, which were explored in the second session.

Session 3: Panel discussion: Participatory Guarantee Systems (facilitator: Patricia Flores, IFOAM)

The objective of the panel discussion was to compare the various examples of Participatory Guarantee Systems (PGS) and to identify their main achievements and challenges.

Figure 9: Panellists presenting Participatory Guarantee System cases.



Manjo (Smith) Krige, of the Namibian Organic Association (NOA), explained that their PGS was established in Namibia in response to both consumers demanding guarantees of quality, and producers wanting to differentiate their sustainable produce. PGS in Namibia has three certification labels: 1) 'Namibian Organic in Conversion' for producers gaining compliance to the organic standards set by NOA within the past year; 2) 'Namibian Organic' (Green) for producers who have been in compliance for between two and three years; and 3) 'Namibian Organic' (Brown) for processed products whose raw materials were certified with the 'Namibian Organic' (Green) label but whose processing was not certified. The value of the three labels goes beyond communicating product quality to the consumer, but also contributes to a recognition that organic agriculture is an evolutionary process that is achieved over time. The PGS system in Namibia is handled by the NOA office, which is responsible for certifying the producers and is made up not only of farmers but also of consumers and representatives of civil society.

Julie Nakalanda, of the FreshVeggies initiative in Uganda, and Irene Kugonza, of the National Organic Agricultural Movement of Uganda (NOGAMU), presented the PGS developed by FreshVeggies in Uganda. The main objective of the initiative is to provide healthy organic food to local consumers, thereby creating a market for sustainable produce. FreshVeggies acts as an intermediary, facilitating the marketing activities of the products and communication between producers and consumers. The initiative was formalized in 2013 thanks to the support offered by NOGAMU, the organization responsible for domestic PGS accreditation. NOGAMU has promoted the 'East-Africa Organic Standard' as the baseline PGS standard. In this way, the consumer is guaranteed that the quality of the products certified by the PGS process is the same as that of products carrying other certification labels. One of the main projects in which NOGAMU

is involved is in opening a proper product directory for each farm with the aim of procuring other marketing channels (particularly in the Middle East).

Ashish Gupta, of the India PGS Organic Council (PGSOC) initiative, explained the system of certification that was being managed by several NGOs for producers organized through relatively independent groups in each community. These, in turn, formed part of the national PGSOC. The NGO's role consists of promoting the marketing channels and providing the necessary documentation (translated into seven local languages) for PGS certification. Each NGO has to have an office in the area where the farmers live and has to develop its own marketing system based on the principle of equity, as well as promote direct marketing between producers and consumers. If an NGO wishes to join PGSOC, it has to comply with the same standards of organic production as all other NGOs or, in case of non-compliance with the criteria, must learn to do so from the nearest NGO and eventually join after one or two years.

Eduardo Lopez and Hugo Chambilla, researchers for the Pan-Andean project Peasant Markets (Mercados Campesinos) in Bolivia, presented the case of organic farmers' markets in the cities of La Paz, Cochabamba and Tarija. At these markets, producers sold products – certified under the PGS system – directly to consumers. Bolivia is one of the few countries in the world where PGS are recognized and regulated by the State. Law N°3525 states that when a PGS is created, its representative has to submit a compliance report to the National Service for Agricultural Health and Food Safety (SENASAG). SENASAG monitors and verifies the PGS activities and submits a report of the process to the National Council on Ecological Production (CNAPE), the body that authorizes certification and the use of the country's two organic labels: 'In Transition' or 'Ecological'. The legal framework that regulates PGS stipulates that each PGS must have a board of directors comprising representatives of farmers, consumers and other interested parties. The board was responsible for ensuring that the standards of the PGS are upheld and a record kept of every farm inspected.

Carmen Cabling, of the Quezon PGS in the Philippines, presented their PGS that was set up in 2012 with the support of the local government of the province of Quezon and Los Baños University. About thirty producers participated in this initiative, which has had great success in the market due both to the quality of the products and to the fact that several municipalities provided public forums for direct trading between producers and consumers. Ms. Cabling explained that, despite the important role played by local authorities in the creation of the PGS system, the central government had almost crushed the initiative in 2013 when it introduced a law that declared that only products certified by an outside source could be granted organic certification, and not all farmers could afford the cost of external certification. The ensuing lobby of civil society led to a change of policy by the central government and to a moratorium on the law, so that PGSs can still be sold as organic products through 2016.

Oscar Nieto, of the Earth Family network in Colombia, explained that PGS is not covered under Colombian law, and that their initiative was born out of the need to guarantee better market access for sustainable products. He explained that the network enables Earth Family producers to sell their products to seven organic stores and fifteen restaurants. The presentation complemented the previous day's outing to the farm and clarified outstanding questions on the peer review certification process carried out by the Earth Family Network. Mr. Nieto explained that the process consisted of three phases: first, an analysis of the agroecological system; second, an analysis of the soil using soil chromatography; third, members of the network visit the farm to familiarize themselves with its operations; and fourth, the productive system can be certified.

Session 4: Panel discussion: Evaluation of sustainable products (facilitator: Allison Loconto INRA/FAO)

The objective of the panel discussion was to compare different cases that used different strategies to evaluate sustainable products. The presentations included the main outcomes and the challenges to product valorization that emerged from each initiative.

Nikhom Phetpha and Alex Kaufman of the Dharma Garden Temple in Thailand presented the 'Moral Rice' initiative, which consisted of a seal that guaranteed the

sustainable production of members' rice, both in terms of farming practices and in social terms, since farmers must respect the five moral precepts of Buddhism in order to obtain certification. The certification mechanism of 'Moral Rice' uses peer review, as in any PGS, with the farmers carrying out their own soil analysis. The Dharma Garden Temple participated in the creation of a radio station funded by the Thai Social Investment Fund through which members of the community transmit information about Dharma related knowledge, music, and events. In order to increase their marketing channels, the Dharma Garden Temple developed the programme called 'Symbiosis' in partnership with Burabha TV, to facilitate the marketing of rice not only in the wholesale market but also in the retail market and for export. The main outcomes of the initiative were the creation of a peaceful space where farmers could produce food that improved food security in the community. However, the questions about how to appeal to youth and how to expand the initiatives were challenges yet to be overcome.

Elaine François-Phillip, from the Braso Seco Paria Tourism Action Committee (TAC) in Trinidad and Tobago, described the way that the Braso Seco community first developed their TAC with Government support in 1997 by organizing an annual festival of indigenous cuisine that is still celebrated today. Over the years, the Braso Seco Paria TAC increased their activities through the creation of eco-tourism. More recently, they began a process of rehabilitating an abandoned coffee and cocoa plantation and started an agrotourism initiative. An agrotourism facility was set up to provide lodging in the community for tourists, enabling direct interaction between members of the community and tourists, who brought a market into the community by participating in local traditional events like the food festival and the traditional 'cocoa dance' that is done to grind the cocoa beans, and purchasing local food products. Despite the positive results, the Braso Seco community needs better infrastructure to continue with this initiative, such as good quality Internet connectivity, and improved human capital in the community, since it is not always easy to convince farmers to practice sustainable agricultural methods.

Figure 10: Mr. Phetpha and Ms. Phillip presenting the 'Moral Rice' initiative and the Braso Seco Tourism Action Committee



Ross Borja and Pedro Oyarzun of the EkoRural initiative in Ecuador presented an initiative on alternative food networks. The initiative consisted of direct sales of baskets of vegetables grown by small farmers in the Sierra Central region of Ecuador directly to consumers in the nearby urban centre. Through their box-scheme, they created direct urban-rural linkages that maintained ecological, economic and social sustainability. This direct relationship was created through a participatory approach whereby EkoRural facilitated negotiations between farming communities and urban consumers' associations as they began to get to know and visit each other in their communities. The initiative resulted in the creation of dialogue and relationships of trust between small family farmers and responsible consumers; and more broadly a nation-wide network of

vegetable box-schemes that began to exert pressure in the political sphere for ecological agriculture. In addition, the initiative guaranteed a mutually beneficial relationship between producers and consumers because the producer could get better prices than from the wholesale market, and the consumer associations had access to healthy foods that were not available through the wholesaler. The main challenge in this rural-urban initiative is that of creating new citizen-consumer habits that, by believing in the values of sustainable agriculture and fair trade, would be directed towards more sustainable products and local markets.

Gabriel Curilef of the Kom Kelluhayin Mapuche association in Chile, explained that their initiative (being the first entirely indigenous Mapuche farmers' association) brought together Mapuche families to preserve the indigenous gastronomic and cultural traditions through the marketing of products produced by Mapuche farmers. Their agricultural model was defined as 'comprehensive food production units' that were based in family farms. Although various foods (vegetables, fruits, eggs, maize, etc.) are produced in these units, the product with the greatest market potential is quinoa. The Mapuche quinoa is unique in being the southernmost variety found in South America, that can grow in cold, low land climates, and has a strong nutritional profile. In order to differentiate their product in the market, Kom Kelluhayin initiated a self-certification process similar to a PGS, that is compatible with the political culture of the indigenous people, that is, a refusal to enable external institutions to exert their power over the Mapuch by judging the quality of their food products. The Kom Kelluhayin cooperative has invested in marketing infrastructure in order to improve the sales of their products. Specifically, they have built a processing plant that can aggregate the variety of the producers' products and they opened a shopfront in the local tourists market where the farmers sell their products directly to consumers. Mr. Curilef explained that they are in a phase of expansion as their products are beginning to reach a variety of consumers, not just the Mapuche farmers, but also conscientious consumers who are organizing themselves to purchase directly from Kom Kelluhayin.

Figure 11: Added values of Warana coffee



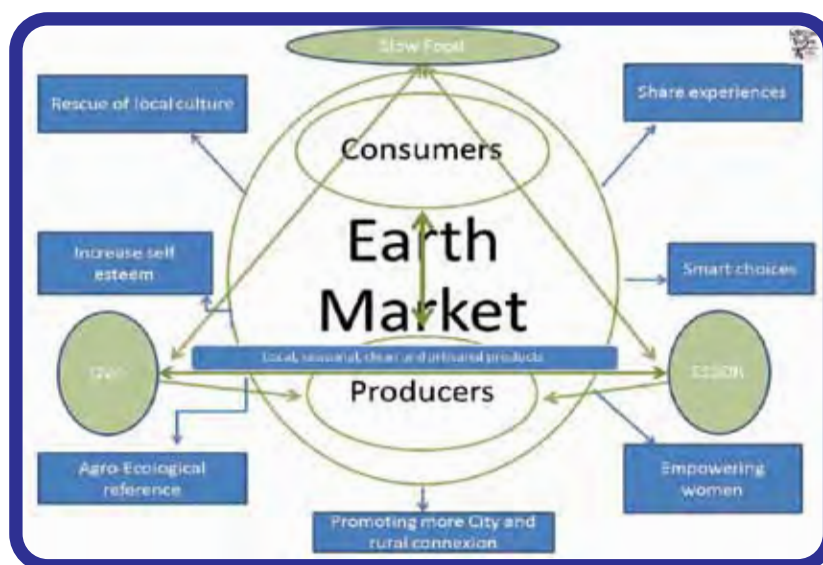
Source: Fraboni, "Proyecto de valoración del café guaraná".

Maurizio Fabroni from the Federal University of Brazil presented the experience of the commercialization of the indigenous 'Warana' coffee, as guarana is known in the Sateré Mawé language. 'Warana' is produced in the Amazon jungle, using a certification system that is not only registered as a Geographical Indications (GI), but also certifies organic production. Mr. Fabroni explained the history of the broader process that sought to acknowledge 'Warana' as a non-material cultural patrimony due to the traditional way in that it was produced. The outcome of these efforts was the creation of economic resources that could be invested in local development projects managed by the indigenous peoples themselves, guaranteeing them greater autonomy in their own communities. The creation of the certification labels (namely: GI, organic, and fair trade) had a positive impact in terms of the financial resources, and contributed both to the conservation of the indigenous biological patrimony and to the cultural preservation of the community (see Figure 11). Added to this, the demonstration of economic and social

dynamism was the best way for indigenous communities to secure their land rights. The main challenge facing indigenous communities lays in getting consumers to understand social and environmental sustainability. These are the values that the Satéré Mawé use in marketing their 'warana', because they feel strongly that only an informed consumer would be willing to pay more money for a higher quality product. The presentation illustrated that apart from intrinsic values, cultural, social, ecological and political values can be shared and protected via a product.

Stelio Joaquim, representing the ESSOR NGO in Mozambique, explained how the 'Maputo Earth Market', was established with support from the NGOs ESSOR, GVC and Slow Food (see Figure 12). The initiative began in the capital city of Maputo and was implemented by an organization of family farmers that sold directly to consumers. The direct relationship that developed between producers and consumers who interacted through the Earth Market enabled the preservation of their local culture, knowledge sharing and learning. Mr. Joaquim explained how the market enables the creation of linkages between urban-rural areas, promotes sustainable agriculture, and in the end, enables farmers' self-confidence and reinforces the autonomy of women. In order for the initiative to be sustainable in the long term, it would need greater attention from the public sector to promote healthy foods and an increase in the number of farmers producing such produce in order to guarantee a constant supply of sustainable products throughout the year.

Figure 12: Network creating the 'Earth market' in Maputo



Source: Stelio, "Maputo earth market".

Marc Barbier and Raphaël Stephens of INRA presented the case of 'the Beehive that says yes!' (La Ruche qui dit Oui!), an Internet platform created in 2011 in metropolitan Paris. The Ruche platform was intended to connect consumers looking for produce directly to the producers selling the produce. It enabled direct contact between producers and consumers within a radius of 250 kilometres. The project works in the following way: the producer, when s/he has enough orders, brings her/his produce to an agreed place where the consumers meet her/him and pay the fair price that had been published online. A local Hive manager organizes the meeting point and the consumer network of each neighborhood; while a central operations centre - 'the Mother Hive' - manages the Internet platform, the payments and the general development of the initiative. The operations centre receives 8.5% of the total sales of the producers (which worked out to be much less than, for example, a wholesaler's percentage). However, as the endeavour grew in size, issues of transparency arose between the operations centre and the various local hives. Nonetheless, The Ruche was able to develop a new form of internet-mediated producer-consumer linkage and created employment opportunities for fifty people who ran the operations centre of the 'Mother Hive' system.

Market outlets visit

The members of the Earth Family Network (Familia de la Tierra) of Colombia took the workshop participants to visit two marketing outlets that collaborated with the Network: BioPlaza and the 'Olive Green' School of Gastronomy. The BioPlaza store specializes in the sale of organic, wholesome unrefined natural produce and runs a lunch counter that serves hot and cold food. The workshop participants were able to see what the Earth Family Network products were and how they were displayed in the store. The 'Olive Green' School of Gastronomy was focused on the development of teaching procedures, training in the culinary arts and the conservation of Colombian gastronomy. In this context, the School of Gastronomy initiated an alliance with the Earth Family Network in order to increase the cultivation of local vegetables and native produce varieties, especially the local potatoes that are so important to Colombian cuisine. By partnering with the Olive Green School, the Earth Family Network established itself in the gourmet market that guarantees the Network not only a consistent and high volume of sales but also very good prices.

Figure 13: The visits to BioPlaza and the 'Olive Green' School of Gastronomy



Informal discussion on the specificities of indigenous communities in terms of sustainable practices (agroecology) (facilitator: *Emilie Vandecandelaere, FAO*)

FAO proposed an informal discussion on the values, principles and mechanisms of governance that made up the indigenous food system in relation to agro-ecological and market exchange practices. This workshop provided a good opportunity to begin discussions on these topics because a number of participants in the workshop were interested in and/or involved with indigenous communities; among them, the authors of three case studies included in the FAO-INRA Project on markets for agroecological products – the cases of the Mapuche in Chile, the Satéré Mawé in Brazil and the He'eia in Hawaii. In addition, FAO had just recently established the “Open Working Group on Indigenous Food Systems” in February 2015 to support and coordinate such programmes. It became evident that agroecology was not a new concept for most indigenous communities since taking care of their lands and the surrounding ecosystems were fundamental parts of their farming practices and livelihoods. The issues that most concerned the Indigenous Peoples were land rights, the conservation of native seeds that formed the basis of their biodiversity, the distinct roles of men and women in agriculture and food practices, dignity and food sovereignty. On several occasions during the discussion, FAO was requested to support the issue of the conservation of native seeds due to the need for a separate marketing channel that respected specific cultural values (in other words, a certification system different from the standard one). This issue was considered vital not only to indigenous peoples but also to agroecology in general. The meeting participants affirmed the need to continue documenting the agrarian practices of indigenous systems and their corresponding market mechanisms, especially geographical indications.

Capacity building priorities

In this session, the workshop participants separated into working groups to identify capacity-building priorities for farmers working in various sustainable agricultural initiatives. The results not only helped the participants to understand which areas needed more work to develop the initiative, but also helped FAO understand which sectors and activities need support.

Dgroup results

Marcello Vicovaro of FAO presented the outcomes of the Dgroup forum which took place during the second phase of the research project (February to April 2015) conducted jointly by the two FAO divisions (AGP and AGS) and INRA. Participants in the forum identified and established the six main challenges:

1. Guaranteed access to sustainable inputs. Farmers have limited capacity to purchase inputs off-farm due to the high costs involved, since they are small-scale producers with limited purchasing power and many of the necessary inputs are not available on the market.
- 2.. Satisfying consumer demand for quantity and availability throughout the year. This was due to the fact that yield diminished in the transition from traditional to organic farming and produce was not available in all seasons since many farmers practiced rain-fed agriculture.
3. Guaranteeing quality to consumers. Determining what qualities consumers want is not easy, and being able to offer the information that consumers need to choose the quality they are seeking is a challenge.
4. Finding the right balance between cost and price. It is neither easy to take into account the real costs of sustainable production nor negotiate prices with several different types of buyer and consumer.
5. Building the capacity of farmers in both sustainable farming practices and marketing skills. Better information is the first step to improving the bargaining power of farmers in the marketplace.
6. How can these systems be made sustainable and attractive to the next generation? We are all faced with the phenomenon of the exit of youth from farming.

The participants were separated into six groups (see Annex 3). In the first phase, each working group was tasked with discussing possible solutions and recording them on a flipchart. Specifically, they were requested to answer the following questions: What solutions do you propose to meet this challenge? Do the solutions presented within the Dgroup meet this challenge? Are there other solutions? What are the resources (human, social, financial, physical, natural, etc.) that are needed to be able to implement these solutions? In the second phase, each flipchart was sent to a different group, thus enabling a peer review of the proposed solutions. The peer-reviewers reflected upon the following questions: Do the identified solutions meet the challenge? Do the identified resources allow implementing the solutions? Are there other solutions and resources that have not been considered?

Plenary session: Results of the working groups on capacity building priorities

Group 1 Flipchart assessed by Group 4: Access to sustainable Inputs

The main inputs identified as necessary for farmers were: micro-organisms, manure, seeds, basalt rock dust, the knowledge of how to use these inputs, native seeds in particular (which is why science had to partner with traditional knowledge). The solutions proposed to guarantee access to these sustainable inputs were, as follows:

- Produce the inputs on the farm and reduce the amount purchased in the market (without eliminating completely the purchase of sustainable inputs) by training

farmers to acquire a minimum capacity to produce those inputs. In order to build capacity, there needed to be collaboration between farmers or a more formalised field school approach.

- Develop scientific knowledge associated with traditional knowledge through partnerships between universities and farmers.
- Develop local, national and international networks for the conservation and exchange of seeds, thereby guaranteeing farmers' access to biodiverse natural resources.

The following resources were identified as necessary for implementing these solutions:

- Financial resources to develop seed conservation programmes and support the activities of the 'seed custodians'.
- Continuous information from both producers and consumers. Systems that facilitate the flow of information (similar to the participative guarantee systems) should be developed.
- Developing agroecology and other sustainability initiatives at the local level that are legitimated at the institutional level.

Group 4 Flipchart assessed by Group 1: Finding the right balance between cost and price

The following solutions were proposed in order to find the right balance between cost and price:

- Develop a simple methodology that would allow both farmers and consumers to understand the costs of production and the cost structure in an agroecological system. In developing the methodology, the concept of positive and negative externalities in an agrarian system must be included.
- Establish direct communication between producers and consumers, enabling consumers to understand the costs that farmers face in producing sustainable produce. By doing so, as well as through other information programmes, responsible consumers could be formed.
- Diversify markets relative to sales prices.

The following resources are needed to implement the solutions:

- More research is necessary, so links with universities needed to be established.
- New markets needed to be developed to encourage direct trading of produce.
- Public incentives in support of sustainable agricultural practices should be created (meaning innovative programs and not direct subsidies).

Group 2 Flipchart assessed by Group 5: Satisfying consumer demand for quantity and availability throughout the year

In order to meet consumer requirements for product quantity and availability, the following solutions were proposed:

- Develop production plans on each farm that would allow the farmer to plan what crops to farm and how. This would enable the farmer to create value for seasonal produce on the farm and for consumers.
- Raise producers' awareness of consumer perceptions of their produce through traceability mechanisms that enabled the consumer to identify the producer and contact them if desired. Forming direct trading relationships between producers and consumers is very effective in this regard.

The resources identified to implement these solutions were as follows:

- Build the capacity to trade in various market segments and to understand the requirements of each segment, developing logistical mechanisms and specialized market labels.
- Seek partnerships with sustainable intermediaries such as chefs, nutritionists, non-profit organizations, environmentalists, and so on.

Group 5 Flipchart assessed by Group 2: Building the capacity of farmers in both sustainable farming practices and in knowledge of their markets

In order to strengthen farmers' knowledge of sustainable farming practices and market opportunities, the following solutions were proposed:

- Participatory fora that involve scientists, the private sector, public authorities and producers could develop sustainable practices adapted to local contexts. These fora could also provide multi-stakeholder policy platforms for organic agriculture at the municipal and/or national levels.
- Develop training programmes and practices targeting youth and experienced farmers.
- Institutionalize sustainable agriculture in the educational system through specific curricula each academic year. Local farmer to school feeding programmes provide hands-on experience for students.
- Support the development of farmers who are specialized in sustainable agriculture through funding and/or investment plans developed and managed by the farmers themselves.

Group 3 Flipchart assessed by Group 6: Providing quality guarantees to consumers

In order to offer guarantees of quality to the consumers, the following solutions were proposed:

- Introduce localized guarantee systems along the supply chains that would facilitate production planning.
- Promote direct communication between producers and consumers (for example, through farm visits, analysing agrochemical residues in produce in a participative manner, providing personal contact information on product labels), as well as appropriate traceability systems that enable consumers to provide information and feedback to producers on the quality of their products.
- Use a multi-sectoral, participative approach (producers, consumers, intermediaries and other interested parties) to lobby governments to promote food security/ food safety in public policy through appropriate regulations that are adapted to small producer realities.
- Promote joint responsibility mechanisms for consumers and producers in the context of food security and food safety.

Group 6 Flipchart assessed by Group 3: How to make these systems sustainable and attractive to the next generation?

In order to keep the systems sustainable and attractive to the next generation, the following solutions were proposed:

- Develop educational plans (both in schools and on the farm) to bring agriculture closer both in and out of school based on suitable methods for each age and linked to concrete projects. These plans should also include the elderly because they can transmit the social and cultural values to the younger generation better than anyone else can (ancestral knowledge, respect for nature, local languages, and so on) thereby enabling the intergenerational transfer of knowledge and values important to

sustainable agriculture (such as the relationship between the ecosystem and the community).

- Develop the communications networks and modernize rural areas through rural research and innovation centres that can help to provide many jobs, creating infrastructure in rural areas (such as electricity networks, Internet, small and medium-sized enterprises that can create jobs, and so on), developing partnerships with the private sector and lobbying for public funding.
- Create rural development plans with a territorial approach based on the same elements of education and innovation, promoting leadership among the younger generation and affirming the empowerment of farmers, as well as women, using public policies that support the processes selected at the local level (subsidiarity).



Moving forward

In this session, three cases of innovations that had successfully managed to scale up the size and influence of their activities were presented. The focus of the session was on the follow-up strategies used by these initiatives that increased the number of producers and consumers involved in their networks, increased the variety of products produced, increased the volume of sales and improved geographical distribution and transport coverage.

How to reach scale? (facilitator E. Vandecandelaere, FAO)

Ashish Gupta, on behalf of Jennifer Chang who could not attend the workshop, presented the case of the Hansalim (meaning “Savings of all living things” in Korean) cooperative. Ashish explained that the cooperative was the agricultural model that was supported by the largest community in the world. The cooperative began in the 1970s as an agricultural cooperative and was immediately transformed into a farmer and consumer cooperative. Today this enterprise includes 39 agricultural communities and over 2000 farmers. There are 440,000 consumer member households. Each new member pays \$30 to join and receives from another member a personal introduction to the philosophy and mission of Hansalim; voluntary work at the store or in training new members is encouraged. The cooperative has several labels because there are different types of farmers and the quality standards are stricter than State organic standards. The farmer receives 76% of the value of the sales of the produce. The cooperative also has various factories for the transformation and packaging of its products, for example, traditional soya sauce, rice, bread and even livestock feed. All the products used to transform the food are produced domestically and the cooperative does not export. Thanks to a modern logistical system, the cooperative supplies its 165 stores and supermarkets all over the country and delivers baskets of produce to households. There are only 100 employees who coordinate an annual volume of sales worth \$350 million dollars.

Figure 14: Structure of the Hansalim cooperative



Source: Chang, “Hansalim: Towards Harmonious Coexistence between Human and Nature”

Selene Scotton and Belvue Akpatcho of the Songhai Centre in Benin presented the initiative created in 1985 by Father Godfrey Nzamujo. The initiative is a model focused on training, production and research in sustainable integrated production systems. Songhai is a competitive system of agricultural and livestock products that focuses on the use of available resources at the local level, while taking care of the environment. The centre is organized around three sectors of a ‘green rural village’: the primary sector of agriculture was the first sector developed and was of crucial importance because it contributed significantly to the creation of wealth, improvements in the standard of living, and served as a catalyst to socioeconomic growth and development. However, over time it proved necessary to develop the secondary and tertiary sectors jointly with the agricultural sector. This established the Songhai integrated production model whereby the waste

from one sector is used as the raw materials for another. In its three decades of existence, the Songhai Centre has set up several factories for the transformation of agricultural produce (where among other products, sausages, syrups, bakery items, dairy products, bottled water, and juices are produced) (see Figure 15) while training over 7,500 young people. Over the years, the Songhai centre has received support from the Government and international organizations. In 2008, the United Nations recognized the Songhai Centre as a centre of excellence. Today, the Songhai Centre has six facilities in Benin and the model is being replicated in Nigeria, Sierra Leone and Liberia via a franchising model. The Songhai model was successful because it was able, thanks to a favourable institutional environment, add value to its agricultural production through a model of integrated agriculture, to create industrial processes for the transformation of produce, to scale up the initiative by building several facilities, and to conduct its own research on effective micro-organisms and variety adaptation through the establishment of a centre for the propagation of improved varieties.

Figure 15: A production line at the Songhai Centre

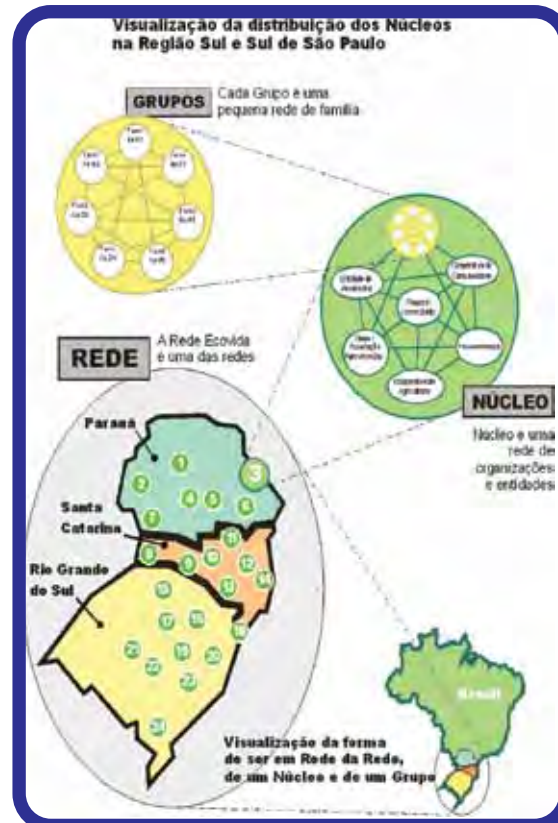


Source: Scotton y Akpachto, "Songhai Vision: Generating healthy living and sustainable wealth through agro-ecological practices"

Marcelo Pasos presented AOPA, a network of farmers that is part of the Brazilian agro-ecological network known as Ecovida. He described how the Ecovida network had been set up in three states (Parana, Santa Catarina and Rio Grande do Sur) by farming families, extension workers and consumers who joined together in cooperative associations and informal groups with small agro-industries, vendors of agro-ecological produce and individuals committed to the development of sustainable agriculture. The objectives of the associations were: (1) to develop sustainable agricultural initiatives; (2) to promote agro-ecological production and consumption; (3) to share information between organizations and individuals; (4) to link farmers and consumers in a supportive manner; (5) to promote the exchange, conservation and appreciation of traditional knowledge; and (6) to create a label that identifies the process, the commitment and the quality. Therefore, Ecovida is not only a system for the storage of food but also a political proposal for substituting the current paradigm of agricultural production. The main strategy of the network is to ensure self-sufficiency of farmers' consumption needs and to sell only the surplus products directly to consumers in densely-populated urban areas such as Sao Paulo. The network uses a decentralized model of organization: a small network of families from one town or village sets up a group; several groups of farmers, together with consumers, retailers and producers in the same region create a nucleus that facilitates the exchange of information and that certifies the products as SPG; then the nuclei form part of the Ecovida network (see Figure 16). Today the network has 850 members and has signed a contract for two million dollars to provide school meals. The State of Brazil has been very supportive of these types of sustainable agricultural initiatives and has developed the public procurement programme for food (Programme for the Purchase of Food, known by its acronym, PAA) and the School Feeding

Programme (known by its acronym, PNAE), that ensure marketing channels for sustainable agricultural produce. Brazil has also created a legal framework for organic and sustainable agriculture (National Policy on Agro-Ecology and Organic Production, known by its acronym, PNAPO), which provide differentiated national standards for their producers. The main daily challenges confronting the network are related to poor road infrastructure and bureaucratic complications.

Figure 16: Organizational model of the Ecovida Network



Source: Pasos, 'SPG and marketing network: Progress and challenges of the Ecovida Agro-Ecological Network'

Policy recommendations

In this session, the workshop participants worked on public sector policy recommendations for authorities in each country and the whole region. In order to stimulate debate, the experiences of the Doctoral Programme in Agroecology of the University of Antioquia in Colombia were presented as an example of a programme developed by a public organization (a university) to promote agroecology through knowledge creation and sharing. Following this, the draft Policy Brief outcome of the FAO/INRA study targeting local, national and international authorities was presented and discussed. The working group results helped the workshop organizers to consolidate policy recommendations in a policy brief.

Keynote address

Sara Maria Marquez Giron of the University of Antioquia presented the doctoral programme organized by the University. The programme is the only one of its kind in Latin America and 50 students from several countries have enrolled. The focus of the doctoral program - and of sustainable agriculture in general - is on learning and using systemic and participative knowledge. Agro-ecology involves family farmers as the basic nucleus of each complex system that includes the communities who conserve ancestral knowledge and characterize the agronomical systems. Therefore, students and researchers are trained not only in agronomy but also in social sciences in order to grasp cultural perspectives. The objective of the doctoral programme is to produce a group of high-quality researchers who can find sustainable agricultural solutions to the issues of climate change as well as to generate innovators in agroecology. Through farmer-led research, students engage with the rural farmers on food sovereignty, seed conservation, soil conservation, and the empowerment of farm communities. This approach to finding sustainable agricultural solutions starts from valuing rural knowledge and supporting it through by scientific knowledge. With the farmers, the doctoral students characterize and classify the farmers' production systems through regional studies, they study traditional knowledge, analyze complex systems, carry out spatial and geo-statistical analysis, evaluate the sustainability and the resilience of the systems and propose agroecological conversion solutions. The professor explained that, in order to empower farming communities and help change attitudes, part of the work they carry out in the farming communities is focused on children and youth. They teach them the principles of nature and how it functions (including systems thinking), natural observation (such as building a herbarium) and critical thinking skills.

Policy themes

Allison Loconto of FAO/INRA presented the draft Policy Brief and the recommendations contained in the research project conducted jointly by FAO/AGP, FAO/AGS and INRA. The five policy recommendations that were identified by the FAO from the results of the Dgroup discussion and from the analysis of the 15 case studies were presented to the participants:

1. Promote interactive entrepreneurship to create and diffuse practical and theoretical knowledge.
2. Strengthen the capacity of farmers in strategic market negotiations.
3. Provide the support to improve communication and trust between farmers, intermediaries and consumers.
4. Improve logistical management.
5. Scale up and give legitimacy to innovative initiatives.

The participants were divided into four groups by continent (two groups from Latin America, one from Africa, and one from Asia and insular countries (see Annex 4). In the first round, each group discussed the recommendations presented and responded to the questions: are these recommendations useful for your region and your individual

countries? Alternatively, what would you recommend? A rapporteur was nominated to stay with the flipchart during the second round of discussion while everyone else moved as a group to another region. In the second round, the rapporteur presented the recommendations from their group and discussion was facilitated about the visitor's views about the recommendations proposed in the region. Finally, each group returned to its original Flipchart and rapporteur to discuss their peer-review experiences and define a single policy recommendation to be presented during the plenary session.

Plenary session: Results of the Working Groups on policy recommendations

Flipchart of Latin American Group 1

The policy approaches discussed by the first group from Latin America were:

The policy approaches discussed by the first group from Latin America were:

- Facilitate alternative approaches for the funding of agroecological activities
- Facilitate the adoption of technologies appropriate to agroecology
- Do not penalize artisanal/traditional production
- Focus on the role played by women in rural areas
- Enhance the value of agroecological practices as a livelihood option
- Promote self-organization and self-management
- Encourage participative processes to support the small farmer

The policy recommendations of the group were:

1. Promote a regulatory framework (at the local, regional, national and international level) that included and fosters (by means of a system of financial incentives) family farming, sustainable agriculture and PGS.
2. Promote policies that support direct local market channels between producers and consumers as well as public procurement of sustainable agricultural produce.
3. Promote social policies that supported the transmission of traditional knowledge to youth, that recognize the important role of women in rural areas and that encourages autonomous forms of organization.

Flipchart of Latin American Group 2

The issues considered by the second group from Latin America during this exercise were:

- Recognize and legitimize territorial self-management and the management of public commons
- Recognize Family Farmers as having rights
- Safeguard access to land and to the means of production
- Promote food sovereignty
- Design a strategy that encouraged the transformation from Family Farming to Sustainable Family Farming
- Enhance the value of models of local knowledge
- Integrate traditional practices with scientific knowledge
- Carry out social marketing campaigns to promote sustainable agricultural produce

- Support mechanisms of community financing
- Cultivate responsible consumers
- Support specialist partnerships (nutritionists, producers, and so on)
- Create a progressive labelling system for food based on how sustainable it is

The policy recommendations of the group were:

1. Recognize Agroecological Family Farming and promote conversion processes as a multi-sectoral and territorial approach to development.
2. Manage knowledge by enhancing the value of local knowledge and reinforce traditional education models.
3. Generate mechanisms for accessing markets for agroecological products and promote responsible consumption.

Flipchart of the group of African countries

The policy approaches discussed by the group from African countries were:

- Adjust existing policies to promote ecological and organic agriculture as a recognized agricultural system
- Promote a legal framework that acknowledges ecological and organic agriculture.
- Create incentives for the environmental services provided by organic farmers.
- Revise local statutes to promote ecological and organic agriculture.
- Study the productivity of ecological and organic agricultural systems to demonstrate that they are as or more productive than the conventional system and thereby influence public policies.
- Review the educational system to incorporate courses in organic agriculture and agroecology.
- Reconstruct extension systems that promote organic agriculture and agroecology, as well as methodologies to promote knowledge exchange.
- Declare genetically modified organisms (GMOs) free areas

The policy recommendations of the group were:

1. Promote policies in support of sustainable agriculture and agroecology in terms of financial resources that can be invested and institutions that would support farmers' access to credit.
2. Revise existing policies with the scope of promoting agroecology and organic agriculture. The policies must be inclusive, with special considerations for ensuring gender equity and small producers.
3. Review national and international policies on education, research and extension services to develop and implement inclusive agricultural and agroecological systems.

Flipchart of the Asian and island nations group

The topics discussed by the Asia and insular nations group were:

- Create bottom-up participative platforms in order to influence policy debate and to enable more actors to 'define' what agroecology means in their countries.

- Promote the application of all existing international conventions that are not yet being implemented.
- Promote public procurement.
- Promote school feeding programmes.
- Create extension services dedicated specifically to agroecology.
- Create new forums that bring together both farmers and civil society to get them involved in the debate over the future of agriculture.
- Create political forums where agroecology issues can be discussed and policies for the promotion of agroecology can be deliberated.

The policy recommendations of the group were:

1. Reconsider the need for a participative forum for the development of dissemination services and research to guide agroecological policies.
2. Reinvest economic resources in sustainable agriculture.
3. Reunite rural farmers with civil society with the aim of influencing public policy.



Closing ceremony

Marc Barbier, Research Director at INRA, emphasized that the issue of sustainable agriculture needed to be brought to the attention of the public authorities and congratulated the FAO for taking up the issue of institutional innovations. Mr. Barbier also stressed the need to continue the advocacy campaigns for the inclusion of the evidence, the practical knowledge and the social values of rural farmers in the definition of agroecology in order to avoid a situation where this concept will be defined solely by theoreticians. In order to achieve this, it is necessary not only to build the capacity of rural farmers but also to have more research and more information circulating about what is going on through grassroots innovations. Finally, Mr. Barbier focused on the need to build a strategy for the development of sustainable agriculture based on the role of intermediaries (social intermediaries, change agents, knowledge brokers) in the innovative initiatives (see Figure 17), aimed at creating a framework for the future of sustainable agriculture and the formulation of meaningful policy recommendations.

Figure 17: The role of intermediation in support of a paradigm change in agriculture

Building Knowledge Capacities to Advocate for AgroEcological Innovation Processes

Goal: Lobbying for the AgroEcological SocioTechnical Regime (AE-STR)

Means: Knowledge & Learning Capacities to create, enforce or support

- **Framing AE Innovation as a political issue** to appear on various local, regional, national, international opportunity-windows (Critical Struggles and Regular Political Arenas): testimony, journal, website, conference, expertise
- **Creating the means for a long-run Advocacy of AE-STR sustainable efficiency:**
 - creating appropriate skills (teaching syllabus and diplomas in Agricultural and Managerial Schools);
 - networking Farming System participatory Research and Demonstration to achieve National AE Report (towards AE local demonstrators and national Observatories);
 - measuring, characterizing and reporting about economical efficiency (assets, margin, value chain)
- **Imagine a Strategic AE RoadMap based on AE Innovation Platforms** within bottom-up process to co-define:
 - research and extension issues;
 - skills and knowledge that are needed;
 - policy instruments and incentives that are relevant to achieve food security and resilience toward climate change

Source: Barbier, 'Closing Session: More Knowledge Capacities for Agroecology'.

Julia Tovar, Executive Director of Slow Food in Colombia, emphasized the importance of voicing the subject of sustainable agriculture and innovation and exchanging experiences in an era in which the global food system was out of balance. Ms. Tovar focused on the importance of individual choice and of the daily habits of food choices because in choosing what to eat, we are each in our own way not only trying to be coherent on the issue of sustainability but also creating and practicing a political alternative to the dominant system. Therefore, her core message was that there needs to be more work done to educate consumers so that they can become co-producers because, through their food choices in the marketplace, they should be aligning themselves with the producers and not against them.

Patricia Flores, Representative of IFOAM in Latin America and the Caribbean, recalled how the Participatory Guarantee System started up for the first time in 2004 with a global meeting in Brazil in which FAO was already involved, and that it was important to affirm

that the international organization has continued to support many initiatives that are alternative to the dominant paradigm. Secondly, Ms. Flores noted that the innovations presented, all having to do with linkages between the small-scale producers and their markets, were focused around the issues of food sovereignty and food security since, by guaranteeing market access to small producers, developing countries could improve their food security. Additionally, an understanding of the mechanisms involved in trade and markets would enable small farmers to build their capacities and, in this way, traditional knowledge and ancestral practices would be included in agricultural systems. Ms. Flores concluded by saying that apart from working on new policies, work needed to be done with consumers using what Vandana Shiva defined as “the force of truth” so that the consumer gained an understanding of the workings of the food system that, once understood, could not remain the same.

Rafael Zavala Gomez, FAO Representative in Colombia, noted that the policy issues discussed in the working groups were rather similar to what was already being said twenty years ago, although the atmosphere had changed greatly. One example of that change was the four events in which FAO Colombia was involved during June and July 2015: a publication by FAO and the Department of Social Prosperity of Colombia entitled, “Food, Territory and Memory,” which explained the sustainable diets of indigenous peoples; the current workshop; the regional workshop on “Voluntary Guidelines for Agro-Environmental Policies in Latin America;” and an event that dealt with food choices based on the concept of a sustainable diet. These events signalled a shift in focus and political opportunity. Mr. Zavala pointed out that we were facing a new paradigm, one in which the issue was not so much about focusing on the producer but on forming consumers who were more supportive and more conscientious thanks to the proximity market channels that are popping up all over the world. Mr. Zavala concluded by recalling the words of the writer José Ortega y Gasset, “I am myself and my circumstances, if I don’t save them, who else will? [“Soy yo y mis circunstancias, si no las salvo yo, ¿quiénes las salvará?”] In this case, the circumstances are precisely the struggle for a better food culture by trying to change our situation.

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Annex 1: Workshop Agenda

Day 1 (23.6.2015)		
Time	What	Who
08.00	Registration and coffee	
09.00	Welcome Purpose of the workshop	Roberto Zavala Gómez, FAO Representative in Colombia TBD, Ministry of Agriculture Pilar Santacoloma, Agribusiness Economist, Rural Infrastructure and Agro-industries Division and the Sub-regional office for Latin America and the Caribbean, FAO Allison Loconto, Research Officer, Institut National de la Recherche Agronomique (INRA)
Sustainable production innovations		
09.30	Keynotes	The state of sustainable agriculture in Colombia <i>Agrosolidaria [tbd]</i> Towards a high energy efficient agricultura system that is connected with markets <i>Jaime Alguiera, Familia de la Tierra</i>
10.00	Session 1 Knowledge creation - How do you create knowledge about sustainable inputs?	IPM Farmer Field Schools' Push-pull methods: The Case of Iran <i>Hossein Heidari, Iran</i> Pineapple waste silage as a novel feed for dairy cattle under organic farming systems <i>Muhammad Kiggundu, Makerere University, Uganda</i> Paepae O Heeia, Indigenous Fish pond restoration <i>Kamana Beamer, Kohala Center, Hawai'i</i> Facilitated by Pilar Santacoloma (FAO)
10.45	Coffee break	
11.00	Session 2 Knowledge sharing - How do you organize the sharing of knowledge about sustainable practices?	Student Organic Farm <i>Jonathan Jeremiah Atungwu, University of Abeokuta, Nigeria</i> Public-Private partnership (PPP) extension services in tea sub sector in Tanzania <i>Filbert Kavia, Tanzanian Smallholders' Tea Development Agency, Tanzania</i> Combined research-extension services for sustainable Indonesian cocoa sector <i>Hiswaty Hafid, University of Sydney, Australia</i> Facilitated by Marc Barbier (INRA)
13.00	Lunch	
Field Simulation of a PGS peer review (farm visit)		
14.00	Departure from the Conference Centre	
15.00	Field visit	Familia de la Tierra, Participatory Guarantee System (PGS) simulation during a farm visit.
20.00	Dinner	

Day 2 (24.6.2015)		
Time	What	Who
08.00	Opening Day 2	FAO/INRA objectives of Day 2
Innovations in market linkages		
08.15	Session 3 Participatory guarantee systems	Panel Discussion on PGS <ol style="list-style-type: none"> 1. Manjo Smith, Namibian Organic Association PGS 2. Julie Matovu and Irene Kugonza, FreshVeggies PGS Uganda 3. Ashish Gupta, PGSOC India 4. Eduardo Lopez and Hugo Chambilla Silva, PGS Bolivia 5. Carmen Cabling, Quezon Province PGS Philippines 6. Oscar Nieto, Familia de la Tierra Colombia Facilitated by Patricia Flores (IFOAM)
09.45	Networking Coffee break	
10.45	Session 4 Valuing sustainable products	Panel discussion on the value of sustainable products <ol style="list-style-type: none"> 1. Nikhom Phetpha and Alex Kaufman, Dharma Temple, Thailand 2. Elaine Francois Phillip, Brasso Seco Paria Community, Trinidad and Tobago 3. Ross Borja and Peter Oyarzun, RuralEko, Ecuador 4. Gabriel Curilef, Quinoa de los Mapuche, Chile 5. Maurizio Fraboni, Waraná Geographic Indication System 6. Stélio Miguel Joaquim, Maputo Earth Market, Mozambique 7. Marc Barbier and Raphaël Stephens, La Ruche qui dit Oui ! INRA, France Facilitated by Allison Loconto (INRA)
12.30	Lunch	
Visit to market outlets		
13.30	Departure from Conference Centre	
	Field visit	Market outlets visit.
19.00	Dinner	Escuela de Gastronomía

Day 3 (25.6.2015)		
Time	What	Who
08.00	Informal discussion on the specificities of indigenous communities in terms of sustainable practices ("agroecology")	Emilie Vandecandelaere (FAO) Pilar Santacoloma (FAO) Marcello Vicovaro (FAO) Representatives of indigenous communities Case study authors linked to indigenous communities Participants interested in indigenous issues
Capacity Development Priorities		
09.00	Opening Day 3 and dGroup Results	FAO/INRA objectives of Day 3 Brief presentation of the core challenges from the DGroups <i>Marcello Vicovaro, FAO</i>
09:15	Group Work 1	<i>What solutions do you propose to meet this challenge? What are the resources (human, social, financial, physical, natural, etc.) that are needed to be able to implement these solutions?</i>
10:00	Group Work 2	<i>Peer review of solutions and resources that have been identified.</i>
10:45	Coffee break	
11:15	Plenary	We will use this plenary to identify the building blocks necessary for a practitioner's guide.
Moving forward		
11:45	Session 5 How to reach scale?	The Hansalim Cooperative, South Korea <i>Ashish Gupta, representing Hansalim</i> Songhai Vision: Generating healthy living and sustainable wealth through agro-ecological practices. <i>Selene SCOTTON, Songhai Centre</i> SPG and commercialization network: difficulties and advances in Ecovida Network <i>Marcelo Passos, AOPA</i> Facilitated by Emilie Vandecandelaere (FAO)
12.45	Lunch	
Policy Recommendations		
14.00	Keynote	Formación de innovadores para la producción agropecuaria sostenible - experiencia colombiana University of Antioquia
14.30	Policy themes	Brief presentation of draft policy recommendations and instructions for Group Work(FAO)
14.45	Group Work 3	Divide the participants into 3 regional groups (LAC, Africa, APO) <ul style="list-style-type: none"> • <i>Are these recommendations useful for your region and your individual countries?</i> • <i>Alternatively, what would you recommend?</i>
15:30	Presentation of Group Work 3, first round	Discussion will be facilitated in order to compare recommendations.
16.00	Coffee break	
16.30	Presentation of Group Work 3, second round	Discussion will be facilitated in order to compare recommendations.
17.00	Plenary	We use this plenary to discuss priorities for future collaboration around policy issues.
17.30	Closing ceremony	Official closure of the workshop. Marc Barbier, INRA Julia Tovar, SLOW FOOD Patricia Flores, IFOAM Roberto Zavala Gómez, FAO
19.00	Dinner	

Annex 2: Workshop Participants

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Annex 3: Working Groups for Capacity Building Priorities

GROUP 1	GROUP 2	GROUP 3
Carmen L. Cabling	Ashish Gupta	Eduardo Lopez Rosse
Jaime Algiera	Alexander Kaufman	Hossein Heidari
Gabriel Curilef	Elaine Francois Phillip	Julie Matovu
Stélio Miguel Joaquim	Marcelo Passos	Belvue Akpatcho
Ross Borja	Selene Scotton	Julia Tovar

GROUP 4	GROUP 5	GROUP 6
Manjo Smith	Irene Kugonza	Oscar Nieto
Hugo Chambilla	Muhammad Kiggundu	Jonathan Atungwu
Kamana Beamer	Filbert Kavia	Hiswaty Hafid
Pedro Oyarzun	Nikhom Pheptha	Patricia Flores
	Maurizio Fraboni	

Annex 4: Working Groups on Policy Recommendations

Latin America 1	Latin America 2	Asia and Island countries	Africa
Mr. Marcelo Passos	Ms. Julia Tovar	Mr. Ashish Gupta	Mr. Stélio Miguel Joaquim
Mr. Jaime Aguierre	Mr. Hugo Chambilla	Mr. Alexander Kaufman	Ms. Manjo Smith
Mr. Gabriel Curilef	Mr. Pedro Oyarzun	Ms. Elaine Francois Phillip	Ms. Julie Matovu
Mr. Eduardo Lopez Rosse	Mr. Maurizio Fraboni	Ms. Carmen L. Cabling	Ms. Belvue Akpatcho
Ms. Ross Borja	Ms. Patricia Flores	Ms. Hiswaty Hafid	Ms. Irene Kugonza
	Mr. Oscar Nieto	Mr. Hossein Heidari	Mr. Muhammad Kiggundu
		Mr. Kamana Beamer	Mr. Filbert Kavia
		Mr. Nikhom Pheptha	Mr. Jonathan Atungwu
			Ms. Selene Scotton
National participants	National participants	National participants	National participants

Annex 5: Participants' Biographies

Ms. Belvue Akpatcho of Benin is a marketing agent at the Songhai Centre from 2011 to 2013. She is currently the head of their Marketing Department. She obtained her Master's Degree at the International Department of the Higher School of Management in Informatics and Science (ESGIS). Prior to Songhai, Belvue worked in several companies in the customer relations development. She has always placed the customer at the top of her list of priorities, or, as she herself put it: "customers are the reason for production." Working at Songhai has given her the opportunity to put her knowledge into practice in terms of market study, trade and customer relations and has finally given her an understanding of the Songhai Integrated system that has taught her a great deal about how to be a multitasker.

Mr. Jaime Aguirre is a theoretical-applied researcher, environmental activist, social leader, permaculturist, self-taught educator and businessman. He specializes in issues dealing with changing practices and paradigms in agriculture, food production and the food system. He promotes democracy in land rights and is an activist against there being only a few multinational companies dominating global food production, seeds and their trade. He is a defender of the right of rural farmers and neo-farmers to an innovative alternative of social and economic development for an ecologically sustainable future.

Mr. Jonathan Atungwu is a professor at the Federal University of Agriculture of Abeokuta (FUNAAB) in Nigeria, where he also obtained his Bachelor's and Master's degrees and his doctorate. Professor Atungwu is a plant nematologist with ten years' practical experience in domestic and international systems of organic cultivation. In 2007, he taught a short course on sustainable agriculture at the University of Coventry in the United Kingdom, and in 2009 at the Agricultural University of China in Beijing. He is a member of the organic agriculture movements in Nigeria and West Africa. In 2010, he set up the international summer school on Organic Agriculture and continues to coordinate the programme that is aimed at training teachers, farmers and students in organic agriculture. He was the Director of the centre for the 'Community-based agricultural programme' at his university, where the students learned about organic agriculture, and thereby training modern farmers in Nigeria. He also created the FUNAAB 'Community Box-scheme' which has 21 members, including professors.

Mr. Marc Barbier is Senior Researcher in Science and Technology Studies at the French National Institute for Agricultural Research (INRA) and a former director of the 'Science and Society' Research Unit in Paris. His research interests have contributed to the fields of social studies of regimes of knowledge in agriculture and his work deals with the governance of sustainable transitions under the numerous pressures for change such as in the use of pesticides, emerging diseases, bio-energy and ecosystem services. He specializes in the longitudinal analysis of socioeconomic and sociopolitical transformations in agriculture. He currently runs a project on the transition to sustainable agriculture in French agriculture (the MCAE project) and forms part of the European project on Governance of the discontinuation of science and innovation policies. His empirical research has led him to focus on quantitative approaches and on the semantic analysis of large textual corpus. He manages the CorTexT Platform of the Institute for Research and Innovation in Society (IFRIS) aimed at creating, reforming and adapting new or existing technologies to promote the social sciences on Research and Innovation in Society. He is co-editor of the publication 'Revue d'Anthropologie des Connaissances' (indexed in Scopus), and lectures in Science and Technology Studies at AgroParisTech.

Mr. Kamanamaikalani Beamer is the President and Executive Director of the Kohala Center. Prior to that, Dr. Kamanamaikalani Beamer was an academic member of staff of the 'Hui 'Āina Momona' Programme at the University of Hawai'i in Manoa with joint appointments to the Richardson Law School and the Hawai'inuiākea School of Hawaiian Knowledge. His association with the Kohala Centre dates back to his selection as a postdoctoral fellow in the inaugural cohort of doctoral and postdoctoral fellowships of the Mellon-Hawai'i programme. Beamer's research on governance, land tenure and resource management in Hawaii, as well as his previous work as director of Āina-Based Education at Kamehameha school, formed the background for his ongoing work as Director of the 'First Nations Futures Institute' of the University of Stanford, a programme

for the development of resource management for indigenous leaders established by Stanford, the Kamehameha School, and Te Rūnanga o Ngāi Tahu in New Zealand. Since 2000, Beamer and his 'ohana have resuscitated and maintained the kalo lo'i (taro fishponds) in the Waipi'o valley, giving him and his children opportunities for malama' āina, deepening their connection with traditional cultures and learning lessons on leadership from nature. In 2013, he was appointed by Governor Neil Abercrombie and confirmed by the Senate to a seat for four years on the Commission for the Management of Water Resources of Hawaii. In 2004, he published 'No Mākou ka Mana: Liberating the Nation' which received the Samuel M. Kamakau Award for Hawaiian book of the year from the Hawaiian Book Publishers' Association. Kamana is the son of Kaponu Beamer and grandson of Nona Beamer.

Ms. Ross Mary Borja is the Executive Director of EkoRural. She is an economist from the Catholic University of Ecuador and received her Masters' degree in Rural Development at Cornell University in the USA. She is a specialist in participatory systems for the monitoring and evaluation of agricultural and health programmes. Over the past ten years, she has been involved in rural development and community management of natural resources through the coordination research and development projects and consultancies in capacity-building. In 2006, she joined World Neighbors as Monitoring and Evaluation Expert for the Andean Region programme in Peru, Bolivia and Ecuador for the design, development and strengthening of the capacity of organizations in participative monitoring and evaluation. Between 2008 and 2009, she was the national representative to Ecuador of World Neighbors, during which time she promoted programmes in sustainable agriculture and community health for indigenous communities and rural farmers in the highlands of Ecuador. Her experience lies in the strengthening of local capacities.

Ms. Carmen Cabling is an activist and practitioner of organic agriculture in the province of Quezon in the Philippines. She is the President of the Quezon Participative Guarantee System (Quezon PGS). Carmen and her husband became committed to organic agriculture in the year 2000 as a concrete response to climate change and global warming in the hills of Mount Banahaw in Sariaya in the province of Quezon in the Philippines. In 2005, she and other practitioners and defenders of organic agriculture published 'LIKA-SAKA', a manual detailing practices and experiences in organic agriculture. Carmen is a member of the Administrative Council and Head of the Committee on Sources of Livelihood of the 'Binhi ng Buhay' farmers' organization in her community. Since then, she has participated in several activities organized by the community on environmental issues, poverty reduction and sustainable agriculture. In 2014, she supported the reestablishment of those farmers who had been victims of typhoon Haiyan in Brgy, Cacao, Kananga and Leyte. Carmen was also the main moderator on the formations on organic agriculture of the group that was the subject of a FAO study. Carmen is currently the executive President of PGS Philippines, a recently set up network of PGS specialists.

Mr. Hugo Rolando Chambilla Silva was born in La Paz, Bolivia. He is an agronomist with a Masters' Degree in Sustainable Development from the Pontifical University of Comillas in Madrid, and a PhD candidate at the Polytechnic University of Madrid. He was the lead researcher in Bolivia for the Andean regional project (in Ecuador, Peru and Bolivia) on 'rural markets'. He is currently a technical assistance seed specialist at the National Institute for Innovation in Agriculture and Forestry (INIAP) of Bolivia. His most recent publications are 'Street fairs, markets and Qhatu, the dynamics of the rural marketing circuits' (co-author), 'Urban and peri-urban agriculture in the city of El Alto in Bolivia: Is it possible to produce inexpensive, wholesome foods at 4,000 metres above sea level?' (co-author of the article), 'Local markets as a catalyst for sustainable agriculture in the High Plateau and Valley of Bolivia. The case of ecological fairs and traditional street markets in La Paz, Cochabamba and Tarija' (author of the article).

Mr. Gabriel Curilef Punulef is a young member of the Mapuche community in Chile. Gabriel holds a Diploma in Innovation and Sustainable Entrepreneurship for the Development of the Mapuche Identity from the Frontier University in Chile within the CIEM framework. He is the Vice-President of the 'Kom Kelluhayin' Mapuche cooperative managed by the agroecological producers themselves. He is involved in municipal politics and his main interest lies in social and human interaction with the Mapuche peoples, in particular with children and the elders, as well as with nature, in order to understand what life is all about.

Mr. Ashish Gupta is the vice-president of the International Federation of Organic Agriculture Movements of Asia (IFOAM-Asia). He has been the IFOAM Global Ambassador for Organic Agriculture since September 2014 and is also a member of the board of Directors and, since 2010, of the National Board of Directors of the Organic Farming Association of India (OFAI). He is the Secretary of the Board of Directors of the PGS Organic Council. Since 2009, he has been a Social Entrepreneur of 'Jaivik Haat', a small-scale sales initiative to offer fair-trade market opportunities and a supply chain to connect farmers with consumers. He has been involved in a campaign since 2013 to promote small farmers and sustainable agriculture to interact with G7 States – the 'POWA-Welt Hunger Hilfe Project'. He is a member of the Small Family Farms PGS in Himachal Pradesh that produces and trades produce through fair trade supply chains and has been a part-time organic farmer since 2010.

Ms. Hiswaty Hafid has been a doctoral candidate at the Department of Earth Sciences at the University of Sydney since 2013. The focus of her research project is the restructuring of the cocoa value chain in Indonesia. Prior to embarking on her doctoral studies, she worked between 2006 and 2009 on development projects focused on community and rural development, and was responsible for the design and implementation of a database system for monitoring and evaluation. Hiswaty completed her Masters Degree in food and nutritional sciences in 2011, and her research career began when she joined a five-year project financed by ACIAR on 'Improving the sustainability of cocoa production in East Indonesia through the management of pests, diseases and the soil in an efficient policy and dissemination environment.'

Mr. Hossein Heidari has worked for 29 years as a researcher for the Department of Biological Control and is currently working on the identification of the predatory insects Chrysopidae and Odonata. He has worked since 1999 as an IPM (Integrated Pest Management) instructor for FAO and UNDP. He has published 7 books and 56 articles on the ecology of insects, agricultural management and other related subjects. He has worked as field team leader for IPM/FFS projects on the cultivation of pistachios, vegetables, apples, grapes, date palms, olives and rice. Over the last two decades, he has trained 575 field facilitators and 7 000 farmers in Iran, Afghanistan, Kyrgyzstan and Cameroon. His interests and experience are empowering communities through his participatory approach. The project he is currently involved with is 'Organic vegetable production through a farm to fork marketing system' in Chilliwack, British Columbia, Canada.

Ms. Alejandra Jimenez is an agricultural economist and Master's degree research student in Agriculture, Food and Sustainable Development at the International Center for Higher Education in Agricultural Sciences in Montpellier, France. Her work has been focused on the study of value chains of agricultural produce in Latin America and the Caribbean. She has worked as a consultant for the International Centre for Tropical Agriculture (CIAT), Bioversity International and the Clayuca Corporation, perfecting agricultural development projects with the support of FAO, the IberoAmerican Institute for Agricultural Cooperation (IICA). She is currently working with FAO on the study on "Constructing 'agroecological food systems'. An analysis of diversified and sustainable market channels."

Mr. Stelio Joaquim has five years' experience working in the non-profit sector. He obtained his degree in Agriculture from the Catholic University of Mozambique. In his current work with ESSOR, he was key in the rapid development of ESSOR activities in the city of Maputo during the past three years. His responsibilities include: planning, follow-up and evaluating the activities based on project outcomes, the development of the organic horticulture value chain, the planning and evaluation of the training programmes on ecological production, leadership, planning and evaluation of projects on the methodology of extension services. He has developed strong skills and experience in the management of human resources and financial management which helped in the creation of the Maputo Earth Market, the Slow Food-Mozambique youth network and, more recently, the Ecologic Dream organization. He is seeking opportunities to contribute directly to economic development projects. He is also interested in acquiring management and advanced leadership skills that will advance him in his career path. He likes to travel and enjoys working in different environments.

Mr. Filibert Kavia is the current Director of the 'Njombe Outgrowers Service Company'

(NOSC), a joint enterprise between the small tea producers of Njombe and the Wood Foundation. Filbert is interested in voluntary sustainable production with links to the market. Filbert, before joining NOSC in January 2015, was from 2008 to 2014 the Director of Agricultural and Dissemination Services for the Tanzania Smallholders Tea Development Agency (TSHTDA), a public institute for the development of small-scale tea growers. He was responsible for the sector of small farmers' production. Between 2000 and 2006, Filbert was involved in agricultural research and training as a research officer at the Ministry of Agriculture and the International Institute of Tropical Agriculture (IITA). Filbert graduated in Agriculture and obtained his Masters' Degree in Agricultural Economics from the Agricultural University of Sokoine in Morogoro, Tanzania.

Mr. Alexander H. Kaufman, after several years of globetrotting, decided to settle in Thailand. Through a casual encounter, he came upon the issue of corporate social responsibility. In 1999, Alex developed the first programme in Thailand for the non-profit training on voluntary standards on human resource issues at the Kenan Institute (with the support of USAID). Alex collaborated with and trained industrial hygienists, social scientists and representatives of corporate compliance. Several years later, Alex began to work as a private consultant. In his position as Director of Operations of Global Standards (Asia), Alex has led a multinational team of consultants on social auditing of garment factories in Cambodia, China, Indonesia, Macao, Mongolia, Korea and Taiwan. In 2007, his passion for the environment led him to study for his doctorate in Environmental Studies. Alex's research explored the socio-ecological influences of a shift to organic agriculture for the rice farmers of north-east Thailand. More recently, he has worked as a consultant for the 'Moral Rice' network at the Dharma Garden Temple in Northeast Thailand. Alex is also visiting professor at several universities on issues to do with corporate social responsibility and alternative agricultural development.

Mr. Muhammad Kiggundu is an animal scientist with five years of experience in the private sector, mainly providing technical assistance and consultation on the management of agricultural operations in the private sector. He has been involved in several research projects to improve livestock production in the agricultural systems of small farmers in Uganda. Since 2014, he has been working as an assistant on the DANIDA funded project, 'Productivity and growth in organic value chains,' at the University of Makerere. His fields of research are the integration and development of low input systems and sustainable dairy production for small farmers that use alternative feedstock such as crop by-products. Muhammad is very interested in the development of new practices at the farm level, strategies for the reduction of post-harvest losses and the improvement farmers' benefits along the dairy value chain.

Ms. Irene Kugonza is the Officer in charge of Regulations and Certification at the 'National Organic Agricultural Movement of Uganda' (NOGAMU), a job that enables the members of NOGAMU to comply with various marketing standards, especially in organic agriculture, fair trade, PGS and environmental norms for certification. She is also a reviewer and formulator of the abovementioned regulations and at the ISO reviews food security, food systems management and the product quality standards. Over the past ten years, she has been active on the front of Internal Quality Management Systems (IQMS), specifically for small farmers and small and medium-sized producers in compliance with multiple certification requirements. She is also a passionate farmer and she and her family have been involved in the cultivation of organic 'apple bananas', bananas, plantains and vegetables on fifty hectares of land in a district of indigenous origin: Rubirizi, in western Uganda. She has a degree in agriculture and a masters' degree in Agroecology. She is currently a doctoral candidate in Soil Sciences under a joint project between the University of Makerere, the city of Kampala and the Swedish University of Agricultural Science in the city of Uppsala.

Ms. Allison Loconto is a researcher at the French National Institute for Agricultural Research (INRA) and the Institute for Research and Innovation in Society (IFRIS) in France. She is also Visiting Expert at FAO. She is President of the Research Committee on the Sociology of Food and Agriculture (RC40) of the International Sociological Association. Allison has a doctorate in Sociology from Michigan State University and a masters' degree in International Affairs and Development from the American University. Her fields of research include governance by standards, innovations in certification systems, regulatory intermediaries, social innovation and governance of the transitions to sustain-

nable agriculture. She is the author of numerous academic articles and two books. Her most recent publication, entitled "Assembling governance: the role of standards in the Tanzanian tea industry" was published in the *Journal of Cleaner Production*.

Mr. J. L. Eduardo López A. Rosse is a doctoral candidate in Development Sciences of the CIDES-UMSA in Bolivia and works at the office of Consumer Affairs at the Autonomous Municipal Government Office of Cochabamba (GAMC). From 2011 to 2013, he worked as a researcher for 'Agronomists and Veterinarians Without Borders (AVSF – Bolivia) specifically on the Programme of Rural Farmers' Markets. Today his work focuses on food security, the safety of food in local markets and farmers' markets in the city of Cochabamba in Bolivia. His areas of specialization are related to organic agriculture, organic fair trade certification, participatory guarantee systems, sustainable livelihoods, sustainable marketplaces and technology for the transformation of meat products. His most recent publications have been on 'The hidden potential of agroforestry systems in Coca production in Chapare' (CIDOB-OCP Policy Center, March 2015), 'Guinea pigs, small farm animals with great potential' (Farming Matters, December 2014), and 'Opportunities and threats to organic farmers' access to financial services in Bolivia' (Minutes of the fourth ISOFAR Scientific Conference, Turkey, October 2014).

Ms. Julie Nakalanda has been an agribusiness consultant since 2010 at Juls Consults, which offers services in agribusiness and in the sustainable development of communities. Julie is a leader in ecological agriculture, in the creation of Participatory Guarantee Systems (PGSs), in the dynamics of community groups, on issues of gender in development of the value chain, and in the creation of savings and loan associations in small towns. She has twelve years' experience in agricultural and community development, working with local and international organizations both in rural and peri-urban environments. She has a Masters' Degree in Agroecology. Her field of interest is teaching agricultural communities how to organize themselves in groups to achieve sustainable development and economic empowerment through self-help initiatives. She is a member of the Administrative Council of the National Organic Agricultural Movement of Uganda (NOGAMU). She herself grows organic vegetables. She is the founder of the FreshVeggies PGS and works as its marketing coordinator. She is also the coordinator for East Africa on the board of the 'Intercontinental Network of Organic Farmers' Organizations' (INOFO)

Mr. Oscar Nieto is an industrial engineering graduate of the Francisco José de Caldas District University. He studied languages and German at the National University and is a researcher and social activist as well as co-founder of the Earth Family Network. Oscar Nieto has vast experience in the marketing processes for agroecological products and native and creole seeds, as well as in organizational strategies for sustainability, sustainable zero emissions productive systems, climate change and innovative development of sub-products.

Mr. Pedro J. Oyarzun currently works for EkoRural as Consultant of Sustainable Agriculture and Rural Livelihoods. He obtained his doctorate in Agronomic Sciences and the Environment from the University of Wageningen in the Netherlands. He has ample experience in research and rural development in Latin America and Europe. Since 1995, apart from doing research at the International Potato Centre in Ecuador, he ran complex projects including agricultural extension, agroecological improvements and particularly the strengthening of organizations of small farmers and food security. As an international consultant for CGIAR, one of his important responsibilities was the institutional development of the Agricultural Investigative Systems (NARs) in Ecuador, Bolivia and Peru. In a similar position at World Neighbors, he worked on sustainable agriculture issues such as soils, water, seed systems and markets. He has been an external evaluator for international and national cooperation. He is the author of numerous scientific articles in international journals and has contributed to teaching publications and flyers.

Mr. Marcelo Passos is a biologist and since 1981 an ecological farmer in Campina Grande do Sul in Brazil. He was certified in 1999 through a third-party certification mechanism. Since 2002, he has helped to build the Ecovida Network participatory guarantee system (PGS). He participated in the formulation of the legal framework for Organic Agriculture in Brazil. He is currently the President of the Association for Agroecological Development (AOPA) and of The Cooperative of Organic Farmers and Agroecological Production

(COAOPA). He is also Secretary-General of the Participatory Guarantee System of the Ecovida Association. He participates in the National Coordination for Agroecology (ANA), and is also on the board of the Intercontinental Network of Organic Farmers (INOFO). He is currently involved in developing projects for the creation and coordination of PGS in organic agriculture around the world and in the payments for environmental services (PES) in organic and agroecological agriculture.

Mr. Nikom Phetpha was one of six brothers born into a farming family. He was recruited by the Thai army in 1971 to serve in the [Land] Surveys Department. In 1979, he left the army to work with the Agriculture and Agricultural Cooperatives Bank (BAAC), during which time he completed his Masters' Degree in Political Science. He was so overwhelmed by the multitude of problems suffered by Thai farmers that he chose a new life path. He took early retirement from BAAC and began to work for the local community centre at the Dharma Temple Garden in Northeastern Thailand. At the Temple, Nikhom helped to create the 'Moral Rice' network, which offered direct access to markets to hundreds of organic farmers. Nikhom Phetpha still grows his own rice, and works as a trainer, researcher, community counsellor and member of the Dharma Garden Temple Foundation. Recently, Nikhom in his capacity as Assistant Director of the Chamnian Saranaga Foundation, has contributed to the expansion of the network of Organic Farmers of Thailand beyond the province in which the network was first set up.

Ms. Elaine Francois-Phillip was born into a farming family in Brasso Seco Paria, a small town in the Northern Range of Trinidad. After having lived outside the community for many years, she returned in 1989 to her farming roots and began to farm her own land. In 1997, Elaine got involved in community work and joined the recently formed Brasso Seco Paria Tourism Action Committee (TAC). She has worked for over five years as the ecotourism representative and executive Treasurer of TAC. Since 2011, Elaine has been the project director of Manchuria estate, which is the hub of TAC agrotourism activities. Her dedication to community development through agriculture has continued to be the focus of her daily activities and she is proud to see the successes achieved through TAC Brasso Seco. In 2014, Elaine had the honour of travelling to New York as a delegate to the United Nations Conference on 'Family farming.'

Ms. Anne-Sophie Poisot is the Deputy Coordinator of the Integrated Plant Production and Pest Management programme in the Plant Production and Protection Division (AGP) of FAO. Anne-Sophie holds a Masters' Degree in Political Science and Economics from the Institute of Political Studies (Sciences Po) in Paris. Her work has focused on the promotion of sustainable agriculture through practical forms of learning for adults such as farmer field schools, support to farmer organizations, reinforcing the links between buyers and producers of sustainable produce, reducing risk from the use of pesticides, quality standards and certification and supporting agricultural policy. She recently coordinated the publication of several training manuals on sustainable agriculture.

Ms. Pilar Santacoloma is an Food Systems Economist in the Subregional Office for Latin America and the Caribbean of FAO. She obtained her Doctorate in Agricultural Economics at Hohenheim University in Stuttgart, Germany, and a Masters' Degree in Agricultural Economics at the National University of Bogota in Colombia. Her work has been focused on the development of value chains, reinforcement of the links between producers and consumers, analysis of the capacity-building needs in agro-industry, food security through agricultural trade, food security and quality standards, promoting the entrepreneurial spirit in the agricultural sector and helping Ministries of Agriculture to design operational projects for the development of the agricultural sector. Her most recent publication is a series of 13 case studies on 'Public-Private Partnerships in Agro-Industry.'

Ms. Selene Scotton is presently serving as Community Economic Development Consultant in the 'Peace Corps' for the marketing team of the Songhai Centre in Porto Novo, Benin. She believes firmly that creativity and community action are key elements for development. She graduated with concurrent degrees in International Relations and French from San Francisco State University. While in San Francisco, she was introduced to the Silicon Valley business scene and began to work as office manager in the technology advertising company, Spongecell. Her passion for innovation and social change led her to join the Peace Corps. At Songhai, she is working on the marketing strategy and on the implementation of a quality control system. When she is not at the Songhai Centre,

she works in the community, teaching youth business skills and the entrepreneurial spirit. She collaborated recently with a group of Beninese and North Americans to hold a Conference on Social Entrepreneurship, the Courage to Innovate, at the Songhai Centre in Porto Novo.

Ms. Emilie Vandecandelaere is an Agro-economist with a Doctorate in Rural Economics. She worked on food quality policies at the General Directorate on Food Policy of the French Ministry of Agriculture (2003-2007). During that time, besides working on food regulations, she developed policies and instruments both to improve the nutritive value of foods through public-private partnerships, such as providing the consumer with enough information about a balanced diet. She has worked for FAO since February 2007. She managed the 'Quality and Origin' programme since December 2013 and, since 2014, has worked in the Investment Centre and the Agro-Industries Division (AGS), leading technical projects and studies associated with voluntary standards, including geographical origin, market linkages and sustainable food systems. Her work involves collating and disseminating information and instruments for the promotion and preservation of product qualities (traditional, ethical, environmental), as well as the supervision of technical projects based in different countries. She has published some practitioners tools, such as the Manual on 'Linking People, Products and Place', a methodology for identifying products with links to their geographical origin, a webtool to enable product inventories to be built, and training materials on these topics.

Mr. Marcello Vicovaro is a consultant on sustainable agricultural markets at the Rural Infrastructure and Agro-Industries Division (AGS) of FAO. He holds a Specialist Masters in Policies and Innovations for Sustainable Food from the International Center for Higher Education in Agricultural Sciences (SupAgro) in Montpellier, France and a Masters' Degree in International Development Cooperation and Human Rights from the University of Bologna in Italy. His work has focused on the analysis of innovations that link sustainable agriculture with the market and the standards that give value to agricultural produce, particularly their geographical origin.



