UNIVERSITY OF TURKU

Hanna Lakkala, Morgan Shaw, Kenneth Ochoa, Marianna Birmoser Ferreira-Aulu, Juha Kaskinen, Carlos Quintero, María Eugenia Rodríguez & Clara Nensthiel

FUTURE LANDSCAPE OF THE COLOMBIAN AGRI-FOOD SECTOR 2030: THE RETURN OF ANDEAN NATIVE CROPS

Results from the 3rd and 4th Futures Workshops of the PECOLO Project in Colombia

FINLAND FUTURES RESEARCH CENTRE
FFRC eBOOKS 7/2020

FINLAND FUTURES RESEARCH CENTRE

Contact at Finland Futures Research Centre, University of Turku:

Project Coordinator Hanna Lakkala, hanna.k.lakkala@utu.fi

Director, Dr. Juha Kaskinen, juha.kaskinen@utu.fi

Contact at Universidad El Bosque in Colombia:

Kenneth Ochoa, ochoakenneth@unbosque.edu.co

Cover photo and photos on the report by Kenneth Ochoa

ISBN 978-952-249-548-8

ISSN 1797-1322

Finland Futures Research Centre
University of Turku | Turku School of Economics
20014 UNIVERSITY OF TURKU

Rehtorinpellonkatu 3, 20500 TURKU
Korkeavuorenkatu 25 A 2, 00130 HELSINKI
Åkerlundinkatu 2, 33100 TAMPERE

tutu-info@utu.fi

utu.fi/ffrc

TABLE OF CONTENTS

FOREWORD

The wicked problems our globally connected and changing world now faces, including a growing population, changing climate, scarce resources, and other sustainability questions, force us to assess our future more carefully than ever before. The future of food is a shared global question that has to be answered at local, regional and national levels, as these concerns impact food value chains around the world.

In order to find possible answers to complicated questions about the future of food, we need data, information, knowledge and commitment from all kinds of stakeholders. Cooperation between governmental organisations, businesses, consumers, civil society, farmers and researchers is essential if we want to develop solutions that are ecologically, socially, economically and culturally sustainable, as well as acceptable to all those involved in making them a reality.

Futures studies and foresight processes and methods aim to support thinking about possible futures and help to find ways to reach those that are most desirable. We have to accept that the future is uncertain, but is it better just to wait and see what happens, or to be proactive and try to shape our futures despite the risks?

In the PECOLO project, the answer is clear: working together with stakeholders, we want to figure out ways to shape a sustainable future agri-food sector in Peru and Colombia. This publication focuses on the Colombian case. It is the second of two publications concerning Colombia that have been produced based on the results of the PECOLO project's four-stage futures process. We hope that it can help all stakeholders in their future work towards sustainable and innovative food futures.

Dr. Juha Kaskinen
Director of Finland Futures Research Centre
University of Turku

1. INTRODUCTION

The PECOLO project, or *Native Crops for Sustainable and Innovative Food Futures in Peru and Colombia*, was developed as a collaboration between the University of Turku, Finland (UTU), the National Agrarian University La Molina, Peru (UNALM) and the University El Bosque, Colombia (UEB). The objective of the project is for higher education, research and innovation environments to support the establishment and maintenance of sustainable, innovative and profitable value chains for Andean native food plant crops.

As part of its strategy, the project focused on transferring tools and methods of future studies and foresight. A series of futures workshops were conducted during the project. With the help of these tools and methods, and through the participation of different interest groups, a set of alternative future states for the Colombian agri-food sector was developed and presented (publication one). Based on the desirable scenario presented in the first publication, a road map and action plan were then developed by the interest groups.

This publication presents the results of the last two workshops (3 and 4) of the project. Diverse categories of actors were involved in these workshops, including participants from academia, civil society, public entities and international organizations related to agri-food systems with a significant role in Colombia.

The first publication in this series (http://urn.fi/URN:ISBN:978-952-249-553-2)", has 5 chapters. The first chapter presents the characteristics of the agricultural sector in Colombia. It presents the national geographical framework, as well as the results of the latest agricultural census. It also highlights the main actors in the agri-food sector at the national level and presents the value chain structure and organization of the sector. Then, it summarizes the agricultural policies and the Strategic Plan for Science, Technology and Innovation in the Agricultural Sector (PECTIA) as a guide to navigating this topic. This chapter also presents contributions made by the sector to the national economy and the current challenges it faces, a fundamental input for the development of the four workshops framed by the PECOLO project. Finally, it presents the context of Andean crops in Colombia, highlighting the types of crops, their productivity, and their functional and nutritional components. The chapter closes with a list of significant challenges to be considered and a discussion of the role of the PECOLO project in the Colombian context.

The second chapter is the reference framework, where futures studies and foresight are taken as a theoretical foundation. It lays the groundwork of a theoretical and methodological approach before closing with an examination of the relationship between future studies and innovation environments.

The third chapter describes the methods and tools of the futures process and explains in detail how the horizon scanning and scenario workshops were run.

The fourth chapter presents the results of each workshop. The first, regarding horizon scanning, highlights the issues of the agricultural and food sector in Colombia. It includes issues on consumption, production, agriculture, innovation, values and trends, population, land and conflict, diets and food trends, public policies, needs associated with the lack of food processing and technologies, emerging markets, the devaluation that the countryside has suffered, the valuation and use of native crops and climate change in relation to natural resources.

In the second workshop scenarios were developed, highlighting issues including: the formalization of land tenure; agricultural production systems; formalization of work; transfer of technology; evaluation

of water and soil management and environmental impacts; and the culture of innovation that might arise from merging new technologies with ancestral knowledge. This chapter closes by offering a desirable future scenario entitled "A Colombia with greater democracy and inclusion", with a time horizon of 2030.

Finally, the publication closes with a final chapter in which the results obtained up to that point in the first two workshops are discussed.

This publication presents the second part of the workshops of the PECOLO futures process, consisting of workshops 3 (the roadmap) and 4 (the action plan). This publication has three main parts and builds on the outcomes of the previous steps.

The first part consists of a description of the methods used in the workshops. The second part presents the results of each workshop. The third part shows the details of the action plan, which has three main elements: Research, Development, and Innovation; Building the Capacities of Value Chain Stakeholders; and Creating a New Culture of Rurality for Future Generations of Farmers.

This publication concludes with a discussion of the results, as well as recommendations and proposed next steps.

2. METHODS

Workshop 3 methods – Roadmap Workshop

In the third workshop, a roadmap was developed with agri-food sector stakeholders. The output of the scenario workshop, the desirable scenario for the Colombian agri-food sector 2030, was used as a basis for this. In groups, the stakeholders discussed the question: *What are the steps that need to be taken to reach the desirable future state of 2030?*

The workshop started by giving an overview of what had been done thus far. Although most participants were present in the previous steps of the futures process, many of them were participating for the first time. The scenario co-created by the stakeholders in the previous step was presented alongside evocative images, to facilitate a poetic immersion into their desirable 2030 state.

Having those images in mind, participants were divided into groups of 4–5 people and introduced to a simple roadmap building technique of four steps, using a road map table (**Table 1**):

1. Based on the desirable future scenario, discuss a vision of a desirable future to achieve as a sector. Formulate a short vision statement.
2. Identify drivers of change (e.g. megatrends, trends, societal needs etc.) that may affect or support your actions. Some drivers such as megatrends have an impact throughout long *time frames, whereas other are more short-lived.*
3. *Define the five most important factors to be taken into consideration (e.g. politics, technology) in the road map.*
4. *For each chosen factor, define the strategic steps to be taken within each given time frame, in such a way that the steps appear achievable and account for how they may interact with one other.*

Table 1. *Road map table used as a tool in the development of the road map. Each group consisting of stakeholders from different organizations completed one road map table.*

Vision statement:				
Drivers of change:	Affects all the time frames			
	Affects one time frame			
Factor 1				
Factor 2				
Factor 3				
Factor 4				
Factor 5				
Time frame		2020-2022	2023-2025	2026-2029

Workshop 4 methods – Action Plan Workshop

In the final workshop of the PECOLO futures process, the road map was transformed into a concrete action plan using the template shown as Table 2. This plan lays out specific steps' stakeholders could follow in the coming years to reach a future as close as possible to the desirable one they have described. While the roadmap covers the entire period between the present and 2030, the action plans focus on the earliest part of this timeframe, from 2020–2022.

Table 2. *Action plan template.*

TOPIC: **ACTION:**	
RESPONSIBLES	
BENEFICIARIES	
RESOURCES	
OBSTACLES	
TIMETABLE	
OTHER	
ASSESSMENT	

During the workshop, participants were asked to deepen the thinking around the proposed actions by considering several specific dimensions. Members of the workshop groups discussed which parties should be responsible for implementing the action, whom it would benefit, what resources would be needed to put it into practice, what obstacles might hinder its progress, and over what time frame it might take place.

3. RESULTS

Workshop 3 results – Roadmap

The third workshop was organized in November 2018 at UEB, with 12 participants attending. The participants were divided into two groups. The experts represented the following types of organizations:

- Academia: 5 participants
- Public sector: 4 participants
- Private sector: 1 participant
- Non-Governmental Organizations: 2 participants

The objective of the workshop was to develop a roadmap for the agri-food sector stakeholders working with Andean native crops. In the first phase each of the two groups developed their own roadmaps.

While one group focused more on technological and institutional issues, the other group was more focused on policies and social aspects of development. Although the visions and the issues brought by each group were different in focus, they were similar in intention; therefore, the two groups complement each other, enriching the combined vision for 2030 by raising a variety of factors for consideration.

Figure 1. *Group working on their roadmap in Bogotá, Colombia.*

The results of the third workshop were consolidated into a single table that integrates the work of groups 1 and 2 into a proposed national roadmap. The combined vision statement reads: "Colombia implements an innovation system for the rural sector that boosts productivity, allows connectivity and guarantees the dignity of all actors, with technological and innovative development differentiated by region, which guarantees food security in 2030".

As part of this change, there are two main drivers: the first is the post-conflict agenda (following the recent peace agreement), as a process within the implementation and consolidation phase. The second is the use of strategies that allow for the continuity of planning and its implementation in territorial and administrative management, transcending the actions taken by a single government during its term.

Regarding this second driver, some participants stated that there are existing long-term planning models covering periods of up to 12 years, as in the case of environmental authorities such as the Regional Autonomous Corporations (CARs). In addition, there are planning instruments used by the National Council of Economic and Social Policy (CONPES), which define long-term guidelines, including inter-ministerial participation, and guarantee financial resources for carrying them out. Furthermore, there are Territorial Ordering Plans (POT), whose administrative jurisdiction is at the municipal level. Finally, there are the Basin Management Plans (POMCA), which are also long-term plans with which municipal development programs (PDM) must align themselves.

The roadmap considered three-time frames: 2020–2022, 2023–2025 and 2026–2029. Drivers of change impacting rural areas across all three periods include climate change and variability, the recognition of biocultural memory and urbanization processes. Discontinuities in government plans and access to renewable energies were mentioned as important drivers of change in the sector at the regional level.

Other relevant topics that emerged in the discussion are research and technological development for promoting agricultural innovation as well as the need for governance criteria. In addition, the Sustainable Development Goals (SDG) were considered as guides to public policy that influence which actors should be involved in the reactivation of the rural sector.

Furthermore, it was mentioned that elected governments should support the consolidation of the peace agreements, for which a renewed institutional framework is required (neo-institutionalism). New institutions are needed to facilitate adjustment to the new political conditions of the country and support the development of projects for innovation and sustainable development in regions and municipalities.

Finally, the groups recognized the need for mechanisms to monitor, control and guarantee compliance with factors that are part of the road map.

The factors highlighted in the road map (Table 3) fall into three major groups. The first group brings together items related to research, development and innovation. It encompasses state policies for regional technological development whose formulation will be especially important during the first period (2020–2022). The state will then need to regulate them during the second period (2023–2025) and define the strategy for their implementation in the third period (2026–2029).

There is also a need for the state to promote the generation and distribution of cleaner energy at the local and regional levels, taking advantage of natural and human capital including traditional knowledge. The state can facilitate support systems for the transfer and innovation of this type of energy across all three periods of time.

In reference to this agenda, one group raised the issue of Law 1715 of 2014, which concerns power generation from non-conventional energy. The law seeks to promote the generation of renewable energy at the local level, encouraging its use in agricultural and post-harvest processes that include Andean crops. An example of this kind of energy production can be seen in the department of La Guajira, located in the Caribbean region in the north of the country. There are similar examples is the Andean region, where Andean crops are produced.

The second group of factors covers ways of strengthening the the agri-food value chain and its actors. It includes improving connectivity and communication, for which the necessary infrastructure must be adapted throughout the decade. It is also necessary to generate a complementary communication strategy at the national level with the participation of the different actors of the value chain. To achieve this by 2030, a process of training, formation and consolidation of networks is required. There is also a need for widespread high-quality information infrastructure in addition to more enduring social connections.[1]

Economic resources are another factor included in this group, highlighting the responsibility of the State to ensure that economic resources are available to develop technological, cultural, social, environmental, innovation and entrepreneurial projects. Sources of funding may include both the national budget and international cooperation programs. Furthermore, it is necessary to provide technical support for the development of shared terms of reference for the projects, as well as their formulation, implementation and administration in ways that support the fulfillment of the vision statement for 2030.

Another factor included in this second group is education. One concern in this area is the meaning and importance of the territory for the communities that inhabit it. Local capital in the form of both natural and human resources will facilitate the creation of territorial planning instruments aimed at improving local conditions according to the principles of sustainable development.

Related to the previous factor, agrarian productivity projects for this decade would benefit from a planning culture that looks to increase the quantity and quality of food products, strengthen associativity, and reduce negative environmental impacts. Such an approach would promote equity, added value and fair trade, through economies characterized by inclusion and solidarity.

Finally, the third group of factors relates to the creation of a new culture of rurality for future generations of producers. These factors include the integration of community organizations and the generation of cultural processes, governance and identity intended to promote rootedness and feelings of dignified permanence in the countryside. To this end, it is necessary to take advantage of the cultural and natural capital of the territory through ecotourism, agritourism and technological development projects. The management of resources through participatory and corruption-free contracting will then allow for rural development and benefits to the Colombian economy.

[1] Connections here refer to two different aspects of communication infrastructure: on one hand, connections to communication networks such as telephone, cell phone, internet, etc.; and on the other, connections between actors, structures and organizations.

Table 3. *Roadmap.*

VISION STATEMENT:

Colombia implements an innovation system for the rural sector that boosts productivity, enables connectivity and guarantees the dignity of all stakeholders. Technological and Innovative Development diversified by regions, guaranteeing food security in 2030.

			2020–2022	2023–2025	2026–2029
Drivers of Change		**Affects all time frames**	Climate Change and climate variability Recognizing bio-cultural memory Urbanization Access to energy and discontinuity of Government plans Follow-up and continuous monitoring and evaluation of all factors Governance Investment Technological development. ODS and involvement of different actors in public policy		
		Affects a specific time frame	Elections / Change of government Consolidation of the post-conflict agreement Law 1715 of 2014 on power generation from non-conventional energy	Institutionalism: institutions need to adapt themselves in times of change	Elections / Change of government Recognition of need for innovative and sustainable technological development
			2020–2022	**2023–2025**	**2026–2029**
Factors	**Research, Development, and Innovation**	**State Policy**	Formulate public policies aimed at regional technological development	Establish guidelines, regulations, processes and strategic implementation	Implement policies for innovative technology development that are differentiated regionally.
		Distributed Local Energy Generation	Regulations and creating incentives and access to technology for small generators at the local and regional level Generation of technologies based on research, participatory action (including Traditional Knowledge)	Create mechanisms for technology transfer	Transfer technology and methodologies
		Transfer of innovation and technological development	Identification of strategic issues for innovation and strengthening innovation environments.	Training new agribusiness models, changing the traditional market model (Ensuring customers).	Innovation contributes towards the increase of GDP.

Building the Capacities of Value Chain Stakeholders	**Connectivity and Communication**	Adequate infrastructure to meet basic and other needs (e.g. Internet) A national communication strategy, with the participation of the different stakeholders, ensures informed decisions.	Building literacy about new infrastructure Collaborative networks channel and articulate information and generate innovative projects	Community producers are connected Collaborative technology and information. Interest groups have information that facilitates access and dissemination of innovation opportunities in the rural sector
	Economic Resources	Allocate and/or add resources from public administration budget to projects on social, technological, cultural, and environmental issues. Search international resources Establish terms of reference for project formulation and resource allocation	Formulate projects for rural development based on the *acuerdo de postconflicto* (on social, technological, cultural, and environmental issues).	Use resources based on contracts (free from corruption) to innovation projects, as well as development of technologies for the rural sector.
	Education	Promote ownership of the meaning and importance of the territory to communities Research on biophysical and bio-cultural resources of the territory Training on standards of POT Participate in the formulation of the POT	Create incentives to encourage the use of land by communities	Take advantage of the resources found in the territory (biodiversity, biocultural) through projects that promote participatory research, and have possibilities for continuation after research projects end
	Productivity	Promotion of a planning culture (quantity, product and associativity) and the formalization of the activities of local producers	Automation of processes related to sustainable products	Increase performance of production units (revenue, efficiency, quality, reducing environmental impacts and generating value-added products and promote established trade relations
Creating a New Culture of Rurality for Future Generations of Farmers	**Socio-culturally Rich, Environmentally Conscious, and Dignified Countryside Life**	Promote community organization of social actors Strengthen and extend the identification of areas with high environmental potential Generation of cultural processes and governance to strengthen their identity, to generate roots, so they remain in the countryside and ensure that resources reach equitably	Design strategic sustainable utilization of the environmental capital by the "Ecotourism" community Develop Ecotourism projects that would promote traditional and ancestral knowledge to new generations. Develop technological, cultural, social and environmental development projects Traditional and ancestral knowledge transfer to new generations	Use resources based on contracts (free from corruption) for innovation and technological development Producers are known as engines of innovation and economic development in Colombia

Workshop 4 results – Action plan

The fourth workshop was organized in April 2019 at UEB. 25 participants attended the final workshop and were organized into 4 groups. The experts represented the following types of organizations:

- Academia: 15 participants
- Public sector: 5 participants
- Private sector: 3 participants
- Non-Governmental Organizations: 2 participants

The objective of the workshop was to develop a shared action plan for the agri-food sector stakeholders based on the roadmap developed in the previous step. In the first phase each of the four groups developed their own action plans, which then were synthetized into one overall action plan. Each of the actions suggested by all four groups are reflected here, although some similar items suggested by multiple groups have been merged for clarity.

The action plan carries forward the themes identified in the road mapping process, focusing on three principal areas:

1. Creating a New Culture of Rurality for Future Generations of Farmers.
2. Building the Capacities of Value Chain Stakeholders; and
3. Research, Development, and Innovation.

Below, Table 4 compiles the information generated by the groups in the workshop in an organized and systematized way. Some cross-cutting and overlapping aspects can be identified within the action plan. The first of these is that the time frame for the completion of most of the actions defined is by 2022, with a few exceptions related to ongoing activities in programs or projects which have previously established their own time frames. The second cross-cutting aspect for the activities is that they all involve identification, planning and implementation phases and are subject to evaluation through monitoring and follow-up processes.

Research, Development and Innovation (R+D+i)

Beginning with the area of research, development and innovation (R+D+i), the groups defined four central topics, each with their own respective activities, people in charge, beneficiaries, resources required, obstacles, time frames and stages. These are: developing new strategic plans, expanding existing strategic plans, developing innovative technologies and aligning academic research and the interests of the rural sectors.

Developing of New Strategic Plans

The first topic is related to the development of new strategic plans, for which 5 different activities are proposed. The first is **designing a development plan** to identify and search for sources of public and private financing, both national and international, taking into account that resources for R+D+i are always limited and therefore it is necessary to link actors with suitable national and international organizations. The plan aims to ensure that financial resources are oriented towards promoting technology, training human talent and enabling access to information. Of course, to achieve this purpose, it is

necessary to understand the requirements of funders and to develop a proposal concerning potential partners.

A second activity related to the **implementation of climate change adaptation strategies** is led by the Ministry of Agriculture and Rural Development of Colombia, with the participation of organizations of farmers' groups, public organizations such as UPRA (Agricultural Rural Planning Unit) responsible for rural planning at the regional and local level, and non-governmental organizations, which also benefit from the implementation of these strategies. To be able to develop this initiative, financial resources, research, adaptation of necessary infrastructure, and ways of overcoming obstacles stemming from land tenure and access to the territory are required.

As a third activity, the action plan proposes the **creation of policy instruments to improve the income of rural populations**. To this end, the Ministry of Agriculture and Rural Development of Colombia (MADR), the National Planning Department (DNP), the Ministry of Environment and Sustainable Development and, in general, the institutions attached to them, will allocate the political, financial and human resources necessary to coordinate tasks aimed at improving the income of communities in rural areas. This is to be done while avoiding excessive planning and guaranteeing the functioning and security of the territories.

As a complementary activity to the previous one, it is essential that political actors concerned with the agricultural sector and its management formulate **public policies to promote sustainable local development**. These measures must also be allocated the necessary political, financial and human resources and provided within a similar time frame.

Finally, cutting across the previous policy processes is a fifth activity that involves **developing strategies for the continuous revision, adjustment and implementation of public policies**. To this end, the necessary mechanisms and instruments must be in place to establish indicators and carry out permanent follow-up and monitoring of activities and processes as they go forward.

Expanding Existing Strategic Plans

A second topic within the area of research, development and innovation concerns expanding existing strategic plans. The first task defined in this area is to **carry out research on the role of biophysical resources** as a basis for the formulation of land-use plans. These plans are produced by the institutes belonging to the Ministry of the Environment and Sustainable Development (MADS), universities, and the Regional Autonomous Corporations (CARs) charged by the law with administering the environment and renewable natural resources within their jurisdiction. They must also promote sustainable development in accordance with the legal provisions and policies of the MADS, and encourage the active participation of communities in decision-making. A second activity seeks to **develop the topics defined in the Strategic Plan for Science, Technology and Innovation for the Colombian agricultural sector 2017–2027**. Finally, a third is **increasing cooperation and joint work between the entities of the Ministry of Trade, Industry and Tourism**, with the aim of leveraging local enterprises and agroindustry toward alternative economic activities for the rural sector such as ecotourism and agritourism.

The beneficiaries of these activities are the territories and their communities, the local authorities, the governmental and non-governmental organizations and small and medium entrepreneurs. Throughout their development they require researchers, human resources with knowledge of the potential of the territories with the capacity to formulate projects, educational material, information and

communication channels, and of course financial resources. To fulfill these activities, there are several obstacles, including among others, local political and economic interests, lack of inter-institutional co-ordination, lack of continuity of personnel, and lack of financial resources.

Developing Innovative Technologies

Another topic the groups worked on in relation to R+D+i is the development of innovative technologies, for which three necessary activities were proposed. The first of these is the **design of programs and projects that integrate the physical, digital and biological environment within the framework of the Fourth Industrial Revolution**. The second is to **design and implement a program to promote the use of clean technologies for sustainable production** in order to achieve food sovereignty and security. The third is to **formulate public policies aimed at regional technological development**. These activities seek to modernize Colombia's rural sector at the regional level, in accordance with the conditions of the territories themselves, through innovative systems that integrate digital and information technology elements and the use of clean technologies for sustainable production.

The central actors involved are first and foremost the ministries related to these sectors: Ministry of Information Technology and Communication of Colombia (MTIC), the MADR, the DNP, the CAR, government organizations related to the sector, and regional and local governments. For their part, public and private universities, private non-governmental organizations and producers, as well as bilateral organizations that contribute to development such as FAO and the IDB each contribute based on the nature of their organization's mission, whether that is through technology, sustainable products, political, human or financial resources. The beneficiaries are the communities of agricultural producers, associations, agribusiness, the aforementioned institutions and the entire rural sector in general. The challenges that need to be faced to be able to carry out these activities are diverse, including corruption, special interests, fear of change, costs, access to land, excessive planning, and security concerns in some territories.

Aligning Academic Research and the Interests of the Rural Sectors

A final issue is to align academic research and the interests of the rural sectors. To achieve this, the need for **research on the responsible uses of local biodiversity** was discussed, as well as the **identification of territories with high environmental potential**. This will facilitate cooperation between academia and the rural sectors, to help generate added value and promote trade equity and gender equality. This topic, which is closely related to the previous one, involves the same actors, requires identical resources and has the same beneficiaries. Specifically, aspects of cultural capital must be harnessed in the territories, which creates opportunities for the integration of rural and urban sectors through the participation of the Ministry of Culture of Colombia and the involvement of city dwellers.

Developing the Capacities of Stakeholders in the Value Chain

With respect to the second area, developing the capacities of stakeholders in the value chain, analysis allows us to distinguish discussion around eight topics, which are complementary to each other. These begin with the **education of producers** and continue with the **formalization of their activities** in the territories and the **consolidation of a community base** through the formation of associations. Associations as a political manifestation generate power that producers can use in interacting with other actors in the agri-food chain. In order to achieve these outcomes, it is necessary to carry out activities aimed at **raising awareness of rights** and **promoting political participation**. It also demands **reconsideration by the state of the ways in which it regulates some actors and functions** of the chain, mainly in the marketing of products. This would open up new possibilities for adding value to crop products. Another issue that is considered important in the Colombian rural sector is that of **promoting a culture of strategic planning**.

The activities proposed in the area of educating producers are: creating a network of capacity building centers to advise peasants in person and virtually; training producers in the recovery of traditional crops and customs; training producers in cultivation, processing and consumption; educating producers to promote their potential as entrepreneurs to make the countryside attractive for leisure, health and education; providing training in the alternative development of the territory; and finally, developing programs on the use of arable land.

Those identified as responsible for the implementation of these activities include the same national and local government organizations, non-governmental organizations and academic and research sector actors included throughout the text. In addition, special mention was made here of producer associations that defend the interests of producers at the national policy level, such as the Federation of Colombian Coffee Growers (FEDECAFE); Federation of Palm Growers (FEDEPALMA); Association of Sugar Cane Producers (ASOCAÑA); Association of Fruit and Vegetable Producers (ASOFRUCOL), etc. Further responsible entities include the National Learning Service (SENA), a technical training entity at the national level with a presence in rural territories through which it offers various training programs, and the Municipal Units of Agricultural Technical Assistance (UMATAS), which provide free technical assistance to producers at the local municipal level.

Several obstacles must be overcome for implementation of these activities to be successful. One is the lack of public policies related to seed laws. Another is the homogenization of cultural and nutritional customs. In the case of quinoa, this has led to producers being unaware of post-harvest processing and preparation methods. As a result, they prefer to sell rather than consume it. In some cases, mafias have a hold on the transport and distribution of food products, becoming the economic beneficiaries at the expense of producers and consumers. Other difficulties are related to the informal character of work in the rural environment and barriers to accessing land.

In order to formalize the activities of local producers and encourage the creation of associations, the development of necessary capacities is required. For this development to occur, the people responsible are the same as for the activities described above. It requires public policy support and encouragement, financial and human resources and diverse methodologies, such as training workshops and group meetings.

With regard to regulation, the State should lead an intervention in the markets to eliminate price speculation and thus reduce existing inequalities. Promoting producers' associations and their participation in other links of the chain will allow for the addition of value to crops or primary production. This will make labor and income more available, and thereby discourage the migration of producers to cities.

Creating a New Culture of Rurality for Future Generations of Farmers

Activities in the two previous areas will support the creation of conditions that will contribute to this new culture of rurality. However, a further activity was considered here. This is oriented around generating cultural processes and governance to strengthen the identity, pride and status of farmers (especially small producers), allowing them to establish roots and remain in the countryside. This is intended to ensure the equitable use of resources in current and future local initiatives.

Of course, in order to achieve the fulfillment of this activity, all those responsible who are committed to this plan of activities, both public and private, at national and international levels, have a central role in the creation, strengthening and sustainability of this new rural culture. Providing young people in the rural sector with all the opportunities and facilities found in urban centers must be a central objective. For this to be possible, basic conditions of security and peace must be provided in the countryside. In addition, it is crucial to recognize the importance of producers to the social, cultural, economic and political structure of the country. Changing the general conception that they are second-class citizens[2] will facilitate access to land and guarantee a lasting, equitable peace.

[2] Historically, there has been a mistaken tendency to underestimate the value of small producers, who in general have more limited access to land, education, technology, etc. This is an issue that has made it difficult for peasants to appreciate their worth. The state has recently sought to address this by promoting a different vision of the small producer.

Table 4. *Action Plan.*

1. Research, Development, and Innovation

Theme	Action	Responsible Parties	Beneficiaries	Resources Required	Obstacles	Timetable			Evaluation
						Starting	**Ending**	**Stages**	
Developing new strategic plans	Design a development plan to identify and pursue sources of public and private national and international funding	Private sector Public National organizations International organizations	Communities Agricultural regions Colombian agricultural sector	Financial resources Information Technology Human talent	Failure to meet the requirements or standards expected by each funding source	2020	2022	Development of a baseline and land studies 2020 Identifying possible funding entities 2020 Presenting the plan to stakeholders and defining budget 2020 Development of the plan 2021-2022	Cost-benefit Productivity
	Implement strategies for adaptation to Climate Change	Ministry of Agriculture Agrosavia Guilds/unions Organizations of agricultural groups Local and regional authorities UPRA (regional and local planning unit)	Local producers Producer organizations Communities (through food security) Society in general (esp. the economy)	Adaptation of infrastructure Financial resources Extension: referred to the amount of land needed to develop the project	Labor availability Land division and occupation	2020	2022	Planning, 2020 Dissemination to different actors, 2021 Formalizing activities, 2022	Monitoring the activities through environmental indicators Presenting an initial and a final report on the activities Follow up of the activities throughout the project
	Create policy instruments for improving the revenue and income of rural populations	Ministry of Agriculture National Department of Planning Ministry of the Environment Entities attached to and linked to the ministries	Institutions Governance Social sectors in rural areas	Financial resources Human resources Political resources	Excess of planning and failure in operability Territorial governance by the state Lack of public safety and security	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process
	Formulate public policies to encourage	Ministry of Agriculture National Department	Institutions Governance	Financial resources	Excess of planning and failure in operability	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process

	sustainable local development	of Planning Ministry of the Environment Entities attached to and linked to the ministries	Social sectors in rural areas	Human resources Political resources	Territorial governance by the state Lack of public safety and security				
	Develop strategies for the continuous revision, adjustment, and implementation of public policies	Ministry of Agriculture National Department of Planning Ministry of the Environment Entities attached to and linked to the ministries	Institutions Governance Social sectors in rural areas	Financial resources Human resources Political resources	Excess of planning and failure in operability Territorial governance by the state Lack of public safety and security	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process
Extending existing strategic plans	Investigate the role of biophysical resources in Territorial Development Plans in order to take advantage of what already exists (installed capacity)	Research centers (Sinchi, IAVIT, etc.) Research institutes of universities Community (e.g. aqueducts) Local governments CARS	Communities Municipalities Decision makers at the local level	Territorial technicians (training) Pedagogical materials Monitoring systems Communication channels Trainers Training of researchers	Local political and economic interests Weak institutions Disinterest of the community Lack of public safety and security	2020	2021	Provision of research topics Identification of key allies Communication of results to communities	Number of people impacted Number of opportunities for benefits (potential of the territory, business plans, etc.) Number of Territorial Development Plans (POTs) impacted Number of academic and non-formal publications Strengthening of infrastructure for education
	Develop the topics defined in the Science, Technology, and Innovation Strategic Plan for the Colombian Agricultural Sector 2017-2027	Agrosavia (agricultural research organization) Ministry of Agriculture CCI (Foreign trade organization for agriculture and the private sector) Colombian Agrarian Institute Sowing Portal (technology platform of the Ministry of Agriculture) Colciencias (science funding organization) Universities	Communities Municipalities Technology providers Consumers, territories, research entities	National budget Funding from Colciencias and Agrosavia National royalty fund Tax incentives for investment in clean technologies Skilled labor Technology	Difficulty of acquiring funds Difficulties in formulating and preparing projects Lack of cooperation between producers Corruption	2020	2027	Dissemination to communities Identification of initiatives Establishing baseline of available technologies Technology monitoring (to identify new technologies) Community training for the implementation of the plan	Number of trained personnel Technologies implemented Projects being carried out and completed Productivity indicators Environmental indicators

		Research institutes FAO Community NGOs Providers of technology for the agricultural sector							
	Increase cooperation and joint work between Ministry of Commerce, Industry and Tourism's entities	Colombian Handicrafts Bancoldex Technical Council of Public Accounting Fiducoldex National Guarantees Fund Fontur National Institute of Metrology Innpulsa Superintendence of Industry and Commerce Procolombia Propais All these entities are attached to the Ministry of Commerce, Industry and Tourism	Communities Small and medium companies Local producers Agroindustrial companies	Financial resources Human resources Infrastructure resources	Difficulties in achieving cooperation between entities due to lack of interest, resources and communication, availability.	2020	2022	Planning of activities 2020 Meeting with entities to present the activities 2020 Developing worktables with entities 2020 Establishing meeting dates to report progress on activities 2020-2022 Monitoring and follow up 2020-2022	Number of trained personnel Technologies implemented Projects being carried out and completed Productivity indicators
Innovating technologies	Design programs and projects that integrate the physical, digital, and biological environment within the framework of the Fourth Industrial Revolution	MinTIC Universities Private technology sector CDTs	Campesinos Agro-industrial companies Agricultural sector Nation Communities	Political will Education and technology Development bodies Technology Financial resources Human resources	Financial and technological barriers	2020	2022	Conceptual design, 2020 Implementation and evaluation, 2021-2022	Patents Utility models for companies Productivity Cleaner production
	Design and implement a program that promotes the use of clean technologies for sustainable production to achieve food sovereignty and security	Government Ministry of Agriculture FAO UN BID (Inter-American Development Bank) Communities	Colombian agricultural sector Campesinos	Financial resources Technology Human resources	Private interests Cultural processes Cost Access to land Corruption	2020	2022	Conceptual design, 2020 Implementation, 2021-2022	Clean technologies used Sustainable products Productivity

	Formulate public policies oriented to regional technological development	Ministry of Agriculture National Department of Planning Ministry of the Environment Entities attached to and linked to the ministries	Institutions Governance Social sectors in rural areas	Financial resources Human resources Political resources	Excess of planning and failure in operability Territorial governance by the state Lack of public safety and security	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process
Aligning academic research and the interests of rural sectors	Research responsible uses of local biodiversity and identify territories with high environmental potentials	Ministry of Culture Ministry of the Environment Local and regional institutions Ministry of Industry and Tourism	Biodiversity Rural population in general	Financial resources Regulations Physical infrastructure Human resources Technicians	Seed laws Resistance to and/or fear of change	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and the development of monitoring strategies
	Establish cooperation between academia and rural sectors to help generate added value and promote trade equity and gender equality	Universities Ministry of the Environment Ministry of Finance Ministry of Agriculture	Rural and urban sectors	Research Participatory action Payment for environmental services Government financing	Limited viability and economic sustainability of producers Traditional stereotypes Merchants and intermediaries (due to their failure to promote fair trade and gender equality)	2020	2022	Joint work of academy and government	Civil society oversight mechanisms for monitoring and evaluation

2. Building the Capacities of Value Chain Stakeholders

Theme	Action	Responsible Parties	Beneficiaries	Resources Required	Obstacles	Timetable			Evaluation
						Starting	Ending	Stages	
Educating producers	Create a network of capacity-building centers to advise campesinos (farmers) in person and virtually	Government Universities CAR (Regional and Sustainable Development Autonomous Corporations) NGOs	Colombian farmers	Human resources Technicians Computer scientists Librarians	Cost Integration of technologies	2020	2022	Planning 2020 Ensure joint work between academy, government and farmers 2020 Developing workshops and online training 2020-2022 Monitoring and follow up 2022	Centers created Number of users' centers attract Implemented solutions
	Train producers in the recovery of traditional crops and customs	Ministry of Agriculture Ministry of the Environment Local and regional institutions (UMATA (Unidad Municipal de Asitencia Técnica) CAR (Corporaciones Autónomas Regionales)	Biodiversity Rural population in general	Financial resources Regulations Physical infrastructure Human resources Technicians	Seed laws Homogenization of cultural customs and nutrition Resistance to and/or fear of change	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and the development of monitoring strategies
	Train producers in cultivation, processing, and consumption	Ministry of Agriculture, Universities, SENA (National Learning Service, a national public institution that gives free or low-cost education)	Rural population in general	Financial resources Regulations Physical infrastructure Human resources Technicians	Seed laws Homogenization of cultural customs and nutrition Resistance to and/or fear of change	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and the development of monitoring strategies
	Educate producers to promote their potential as entrepreneurs to make the countryside attractive for leisure, health, and education	Ministries Academia Government funding Chambers of Commerce	Producers Consumers	Cooperatives Ministries Academia Banks	Low capacity for forming associations Transportation mafias Inability to participate in the value chain	2022	2025	Planning of the project (determining intervention areas and stakeholders) 2020 Presenting the project to stakeholders 2022 Development of	Number of entrepreneurial projects and business plans

								the project 2022-2024 Monitoring and follow up of the activities once the project is over 2025	
	Provide training in alternative development of the territory	Ministry of Culture Ministry of the Environment Local and regional institutions Ministry of Industry and Tourism	Environment Communities Local, regional, and national economy	Human capital Financial resources Technical assistance Technologies Institutional resources	Conception of the campesino as a second-class citizen Low income/lack of long-term income Land tenure Lack of formalization of field work	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process
Educating producers (cont.)	Develop programs on the use of arable land	Ministry of Agriculture Ministry of Education Ministry of Finances Ministry of the Environment Department of Economic Development Guilds Coffee and cacao growers Local communities Academia and educational institutions, research centers, and universities	Communities Youth Rural educational centers Foundations Guilds	Economic resources Guidelines Educational centers National policies	Lobbying Some politicians taking advantage Tangible development of the program Political and academic appropriation of money Resistance from communities Loss of institutional credibility if they are not contributing in tangible ways	2020	2022	Political agreement Development of state policy Defining roles and assigning work activities Participation of community guilds	Program indicators Feedback and follow-up
Formalizing the activities of local producers	Build capacities needed to formalize the activities of local producers	Ministry of Agriculture Municipal authorities Municipal Agriculture Support Unit (UMATAS) Mixed entities: referred to organizations that are both private and public Leaders of associations Ministry of Commerce, Industry, and Tourism Guilds	Associations Municipalities Guilds	Training workshops on how to form associations Experts in planning Technical assistance for crop planning Consolidation of value chains by sector	Institutional weaknesses of the planning entities Planning culture Perspective on the campo (subsistence) Resistance to change Distrust of producers and intermediaries Organizations	2020	2022	Generate worktables Training of trainers Form productive alliances Harmonize the agendas of public entities	Number of alliances Number of associations Tons of commercialized product Continuity of value chains Cost savings from block purchasing

Forming associations	Create strategies to enable producers to form associations	Local and regional institutions Ministry of Industry and Tourism	Communities Local, regional, and national economy	Human resources Financial resources Technical assistance Technologies Institutional resources	Conception of the campesino as a second-class citizen Low income/lack of long-term income Land tenure Lack of formalization of field work	2020	2022	Planning, 2020 Implementation, 2021-2022	Monitoring and follow-up throughout the process
Reconsidering regulation	Intervene in how markets are regulated to eliminate price speculation	Ministries Academia Government funding Chambers of Commerce	Producers Consumers	Cooperatives Ministries Academy Banks	Low capacity for forming associations Transportation mafias Inability to participate in the value chain	2020	2022	Development of a baseline and studying the behavior of prices 2020 Development of a plan with strategies to stabilize market prices 2020 Implementation of the plan 2021-2022 Monitoring, follow up and improvement opportunities 2021-2022	Monitoring and follow-up throughout the process
Adding value to harvested crops	Generate added value for harvested crops	Ministry of Agriculture Agrosavia Guilds/unions Organizations of agricultural groups Local and regional authorities UPRA (regional and local planning unit)	Local producers Producer organizations Communities (through food security) Society in general (esp. the economy)	Adaptation of infrastructure Financial resources Extension (?)	Access to markets Input prices Labor availability Migration of farmers to cities Land tenure	2020	2022	Planning, 2020 Dissemination to different actors, 2021 Formalize activities, 2022	Continuous monitoring of production processes
Fostering a culture of strategic planning	Promote a culture of strategic planning (for quantity, products, and forming associations)	Ministry of Agriculture Municipal authorities Municipal Agriculture Support Unit (UMATAS) Mixed entities (organizations with both private and public functions)	Associations Municipalities Guilds	Training workshops on how to form associations Experts in planning Technical assistance for crop planning Consolidation of	Institutional weaknesses of the planning entities Planning culture Perspective on the campo (subsistence) Resistance to change Distrust between	2020	2022	Generate worktables Training of trainers Form productive alliances Harmonize the agendas of public entities	Number of alliances Number of associations Tons of commercialized product Continuity of value chains Cost savings from block purchasing

		Leaders of associations Ministry of Commerce, Industry, and Tourism Guilds		value chains by sector	producers and intermediaries Organizations				
	Establish terms of reference for project formulation and resource allocation	Embassies National Planning Agency (DNP) International institutions International cooperation Local development plans Mixed entities (organizations with both private and public functions) Local communities	Local communities Municipalities Regions State Third parties and collaborators Consumers	Cooperation National and international calls Technical resources Technologies to implement	International agendas Interests of communities Difficulty in accepting projects	2020	2022	Monitoring of funding sources Dissemination to the fields of interest Building up worktables with stakeholders to ensure collaboration	Number of completed projects Terms of reference formulated Resources obtained
Enabling distributed energy generation	Diagnose possible sources of local distributed energy generation	Mining - Energy Planning Ministry of Mines Ministry of Agriculture and Rural Development Rural Development Agency	Small producers in rural areas Natural environment Rural communities	Financial resources Low cost, context-specific technologies Physical infrastructure and labor	Resistance to change Difficulties in transferring technologies Lack of public safety and security Difficulty accessing road infrastructure	2020	2020	Developing a baseline and potential areas for clean energy project 2020 Creating the project 2020 Presenting to stakeholders and ensuring funding sources 2020 Development of the project 2021-2022 Monitoring, follow-up and improving opportunities 2022	Cost-benefit indicators Return rate
Enabling distributed energy generation (cont.)	Provide training on possible sources of local distributed energy	Ministry of Mines Mining - Energy Planning Unit Ministry of Agriculture and Rural Development Rural Development Agency	Small producers in rural areas Natural environment Rural communities	Financial resources Low cost, context-specific technologies Physical infrastructure and labor	Resistance to change Difficulties in transferring technologies Lack of public safety and security Difficulty accessing road infrastructure	2021	2021	Generate worktables Training of trainers Providing clean energy infrastructure Form productive alliances	Number of people trained Number of projects in planning phase Number of ongoing projects Number of finished projects

	Engage in participatory action research with communities to select the most appropriate sources of energy and investigate their feasibility	Ministry of Mines Mining - Energy Planning Unit Ministry of Agriculture and Rural Development Rural Development Agency	Small producers in rural areas Natural environment Rural communities	Financial resources Low cost, context-specific technologies Physical infrastructure and labor	Resistance to change Difficulties in transferring technologies Lack of public safety and security Difficulty accessing road infrastructure	2021	2021	Develop studies, field work and potential areas for clean energy project 2021 Establish costs and return rates 2021 Presenting to stakeholders and ensuring funding sources 2021	Cost-benefit indicators Return rates Number of potential areas for clean energy projects
	Create incentives for entrepreneurial and local community proposals for local distributed energy	Ministry of Mines Mining - Energy Planning Unit Ministry of Agriculture and Rural Development Rural Development Agency	Small producers in rural areas Natural environment Rural communities	Financial resources Low cost, context-specific technologies Physical infrastructure and labor	Resistance to change Difficulties in transferring technologies Lack of public safety and security Difficulty accessing road infrastructure	2022	2022	Schedule of evaluation and monitoring as a requirement for incentives	Number of incentives created Total invested costs Number of projects developed
Creating awareness of rights and encouraging political participation	Train citizens in understanding their legal rights, community organizing, and practices of civil society oversight	SENA: National Learning Service: national public institution that gives free cost education Attorney General Indigenous Peoples Council	Communities Guilds Rural sectors	Financing	Stereotypes The misperception that indigenous people are terrorists Traditional political groups Political divisions Lack of involvement in environmental and post-conflict programs	2020	2022	Formation of committees Monitoring and real evaluation	Number of people trained

3. Creating a New Culture of Rurality for Future Generations of Farmers

Theme	Action	Responsible Parties	Beneficiaries	Resources Required	Obstacles	Timetable			Evaluation
						Starting	Ending	Stages	
Dignifying the countryside (*campo*)	Generate cultural processes and governance to strengthen identity, pride, and status of campesinos; allow them to put down roots and remain in the field; and ensure equitable use of resources for creating and enhancing current and future local initiatives	Local authorities NGOs Local organizations Ministry of Agriculture CARs Producers Associations Ministry of Culture Ministry of Industry and Tourism Academia Private Sector	Communities Municipalities Regions Local, regional, and national economy Future generations	Local resources Regional cooperation Incentives for young people Academic support Sena (National Learning Service) Research Institutes Ministry of Agriculture Entities that support the strengthening of community processes (e.g. NGOs) Human capital Financial resources Technologies Natural and ecological resources	Actors who undermine embeddedness (e.g. extralegal groups) Disinterest in the community Local conflicts Lack of public safety and security Weak institutions Lack of synergy among institutional actors Conception of the campesino as a second-class citizen Low income/lack of stable long-term income Land tenure Lack of formalization of field work State resource allocation	2020	2022	Create spaces for cultural events Planning, 2020 Implementation, 2021-2022	Number of successful experiences Baseline of awareness among young people Publications Rootedness Higher level of sovereignty and food security Improved quality of life Monitoring and follow-up throughout the process

4. DISCUSSION

This action plan focuses primarily on agricultural producers and their ability to create dignified and sustainable rural livelihoods in the future.

The future fate of *campesinos* (rural peasant farmers) looms large in the discussions that took place during this workshop. A theme taken up by three of the four workshop groups was the means by which to create a new "culture of rurality" that would dignify the *campo* (countryside). This effort toward devising strategies for "dignification" of the *campo* is responding to traditional stereotypes portraying *campesinos* as second-class citizens whose subsistence way of life lacks long-term viability due to issues of land tenure, lack of available labor, difficulties in transferring technologies, and security concerns. In recent years many farmers have chosen to migrate to cities and young people have been less inclined to see agrarian lifestyles as desirable or even viable ones.

The actions described in this plan aim to counteract this view and strengthen a sense of identity and rootedness among rural dwellers. This would allow them to feel pride and achieve status through the crucial local roles they could play in the future sustainable development of rural areas.

For this to be possible, campesinos need various kinds of intangible and concrete support in the future, both of which the action plan seeks to address.

Policy instruments could better support the needs of rural farmers for revenue and income and reconsider regulation to eliminate price speculation. They could also encourage the responsible use of biophysical resources, the preservation of biodiversity, and recognition of the various potentials of sustainably managed natural environments. Creating these policies requires building political capital so that a lack of political will does not stand in the way of these measures.

Education programs can contribute to the capacities of producers to recover traditional crops and customs; cultivate, process, and consume these crops intelligently; formalize their activities and come together in associations; become entrepreneurs; understand and make use of their legal rights and effectively participate in political processes; and develop the countryside in both economically rewarding and environmentally sensitive ways. Academic research can seek ways to add value to crops.

In terms of physical resources, *campesinos* would benefit from increased access to information and communications technologies (ICT), transfer of clean technologies for sustainable production, and the development of infrastructure for distributed local energy generation. The framework of the Fourth Industrial Revolution was suggested as a concept that could bring together physical, digital, and biological elements as a reference point for future programs and projects.

Numerous categories of actors were suggested as having different kinds of responsibility for whether these aims will be achieved.

Government at the local, regional, and national levels was seen as playing a crucial role. Several government ministries, as well as the Rural Development Agency, receive repeated mention as important players. The agency of guilds, unions, and other agricultural organizations is likewise at the forefront. Universities and research institutes are prominent.

For actions such as technological development, private sector actors and organizations are potentially valuable partners. For others, the skills and agendas of non-governmental organizations would be required, as in the case with the National Indigenous Organization's advocacy on behalf of indigenous peoples.

Many obstacles to these actions raised by participants reflect the still tenuous nature of posacuerdo potentials.

The continued lack of public safety and security in rural contexts was a frequently mentioned concern. Violent extra-legal and paramilitary groups, including transportation mafias, were discussed as actors who "undermine embeddedness" for *campesinos*. Local conflicts, weak and poorly coordinated institutions, corruption, and the misperception of indigenous groups as extremists also contribute to a sense of instability.

At the same time, resistance to and/or fear of change is also a prominent obstacle. This may relate to producers' distrust of intermediaries along the value chain and the lack of credibility many political institutions currently seem to have as change agents.

A major concern of the Research, Development, and Innovation section is how to align public policy discussions and academic research with the concerns and interests of rural farmers.

Several suggested actions in the Research, Development, and Innovation section of the action plan are concerned with both elaborating new strategic plans and the development of existing ones, such as the *Science, Technology and Innovation Strategic Plan for the Colombian Agricultural Sector 2017–2027*.

Some workshop participants called for efforts to create a stronger culture of strategic planning within public and private institutions. However, for others this was tempered by the view that an excess of planning accompanied by failures in implementation could stand in the way of development. Thus, it was argued that developing capacities for strategic planning needs to be complemented by capacities for translating plans into actionable and well-coordinated initiatives that can produce tangible results.

It is evident that the agri-food sector is assuming a very important role in rural policy at the national level, based on ongoing cultural and technological reforms.

In each of the workshops, the importance of this sector in national development was highlighted. Although it is true that every year its share of national GDP falls, it has clearly demonstrated growth in terms of production, job creation and other economic indicators.

However, agriculture still presents challenges such as the lack of a sense of belonging, which makes young people skeptical of finding promising future as producers. These challenges must be tackled on several fronts, such as cultural appreciation and the technification of production processes, which will make it possible to create added value for small farmers' products.

Finally, it is necessary to design and implement new production models in which the risk associated with being a producer is reduced. This will make it easier for producers to concentrate on improving technologies and realizing the potential of Andean products.

5. RECOMMENDATIONS AND NEXT STEPS

The best arguments for supporting the Andean grains in Colombia are probably their health and nutritional benefits, combined with their contribution to Climate Change mitigation and adaptation. There is a huge amount of potential for new healthy and sustainably produced food products to replace unhealthy ones. Markets are of course directly dependent on consumption habits and pricing. Marketing efforts are one way to raise the level of awareness of Andean grains, but education and information programs, both for consumers and producers, are also essential. Healthy food products should be affordable to all consumers, not just luxury items for the wealthy.

Through this project's four workshops, the participating groups demonstrated a clear path to a future where Andean crops are a core element strengthening the peasant sector in Colombia. In the face of current challenges and in light of the scenarios considered here, the continued participation of the stakeholders is essential to achieve models that can transform the current reality and build a desirable future.

In order to advance this roadmap and action plan, it is necessary for the actors indicated throughout this document to bring together teams that can follow up on its implementation. Although many actors concerned with agri-food issues participated in the construction of this vision of the future, it is essential to continue work to integrate it with current policies and territorial planning instruments.

To this end, a proposal has been made for the creation of a national roundtable to discuss implementation and evaluation issues with different authorities. El Bosque University proposes to continue work within its academic networks to strengthen the processes of research, development and innovation associated with building the capacities of small producers, on issues associated with cleaner production, productivity and environmental health, and with the aim of improving the quality of life of this group and the areas in which they live.

Finally, since this publication presents an action plan only up to 2022, it is essential to remain aware that the planning process should not end here. By the end of 2022, an action plan for the following period should be in place to ensure that these efforts carry on uninterrupted.

LATEST FFRC eBOOKS

7/2020 Lakkala, Hanna – Shaw, Morgan – Ochoa, Kenneth – Ferreira-Aulu, Marianna Birmoser – Kaskinen, Juha – Quintero, Carlos – Rodríguez, María Eugenia & Nensthiel, Clara: Future Landscape of the Colombian Agri-Food Sector 2030: The Return of Andean Native Crops. Results from the 3rd and 4th Futures Workshops of the PECOLO Project in Colombia.

6/2020 Lakkala, Hanna – Ochoa, Kenneth – Ferreira-Aulu, Marianna Birmoser – Kaskinen, Juha – Quintero, Carlos – Rodríguez, María Eugenia – Trujillo, Omar – Nensthiel, Clara & Vähäkari, Noora: A Scenario for the Desirable Future of the Colombian Agri-Food Sector 2030 – Focusing on Andean Native Crops. Results from the 1st and 2nd futures workshops of the PECOLO project in Colombia.

5/2020 Minkkinen, Matti – Ahlqvist, Toni – Kolehmainen, Jari – Mäki, Maija – Parkkinen, Marjukka – Siivonen, Katriina – Tapio, Petri & Arvonen, Anne (eds): Coolest Student Papers at Finland Futures Research Centre 2019–2020. Tulevaisuuden tutkimuskeskuksen valittuja opiskelijatöitä 2019–2020.

4/2020 Jones, Ana & Wilenius, Markku: Arctic Blue Resort – Kontiolahden vastuullisuuskäsikirja.

3/2020 Jones, Ana & Wilenius, Markku: Arctic Blue Resort Kontiolahti – Co-responsibility Handbook.

2/2020 Kuhmonen, Tuomas: Nuorten yrittäjyyspolut.

1/2020 Lakkala, Hanna – Shaw, Morgan – Birmoser Ferreira-Aulu, Marianna – Del Carpio Rodríguez, Amed Omar – Kaskinen, Juha – Repo-Carrasco-Valencia, Ritva – Morales-Soriano, Eduardo – Vargas Delgado, Luis Fernando & Vidaurre-Ruiz, Julio: A Roadmap until 2030 and first action plan for the Peruvian agri-food sector, focusing on Andean native crops. Results from the 3rd and 4th Futures Workshops of the Pecolo Project.

13/2019 Parkkinen, Marjukka – Ahokas, Ira – Kiviluoto, Katariina – Saarimaa, Riikka & Tapio, Petri: Liikunnallisen elämäntavan haasteita ja ratkaisuja. STYLE-hankkeen sidosryhmätyöpajojen tulokset.

12/2019 Aalto, Hanna-Kaisa – Lauttamäki, Ville – Minkkinen, Matti – Puustinen, Sari – Santaoja, Minna – Siivonen, Katriina & Arvonen, Anne (eds) (2019) Coolest Student Papers at Finland Futures Research Centre 2018–2019. Tulevaisuuden tutkimuskeskuksen valittuja opiskelijatöitä 2018–2019.

11/2019 Siivonen, Katriina – Heinäjärvi, Henna & Tuittila, Satu: Historian museon toiminnan tulevaisuuskuvat.

10/2019 Silvonen, Essi & Kaskinen, Juha: ICLEI Green Circular Cities Coalition. Feasibility Study to Build an Active Network of Circular Economy Actors in the Turku Region.

9/2019 Silvonen, Essi & Kaskinen, Juha: ICLEI Green Circular Cities Coalition. Toteutettavuustutkimus aktiivisen kiertotaloustoimijaverkoston rakentamiseksi Turun seudulla.

8/2019 Lakkala, Hanna – Birmoser Ferreira-Aulu, Marianna – Del Carpio Rodríguez, Ahmed Omar –Kaskinen, Juha – Morales-Soriano, Eduardo – Repo-Carrasco-Valencia, Ritva – Vargas Delgado, Luis Fernando – Vidaurre-Ruiz, Julio & Vähäkari, Noora: A Scenario for the desirable future of the Peruvian agrifood sector 2030, focusing on andean native crops. Results from the 1st and 2nd futures workshops of the PECOLO project.

7/2019 Kuhmonen, Tuomas & Kuhmonen, Irene: Suomen kotieläintuotannon tulevaisuuskuvat.

6/2019 Vehmas, Jarmo & Saarimaa, Riikka (eds): Energizing Futures − Sustainable Development and Energy in Transition. Proceedings of the Futures Conference 2018.

> Find all the FFRC eBooks at our website.

UNIVERSITY OF TURKU

Get inspired by futures.

Finland Futures Research Centre
University of Turku

Hanna Lakkala, Morgan Shaw, Kenneth Ochoa, Marianna Birmoser Ferreira-Aulu, Juha Kaskinen, Carlos Quintero, María Eugenia Rodríguez & Clara Nensthiel

FUTURE LANDSCAPE OF THE COLOMBIAN AGRI-FOOD SECTOR 2030: THE RETURN OF ANDEAN NATIVE CROPS

Results from the 3rd and 4th Futures Workshops of the PECOLO Project in Colombia

FFRC eBOOKS 7/2020

ISBN 978-952-249-548-8, ISSN 1797-1322

FINLAND FUTURES RESEARCH CENTRE