# The Outlook for Agriculture and Rural Development in the Americas:

A Perspective on Latin America and the Caribbean

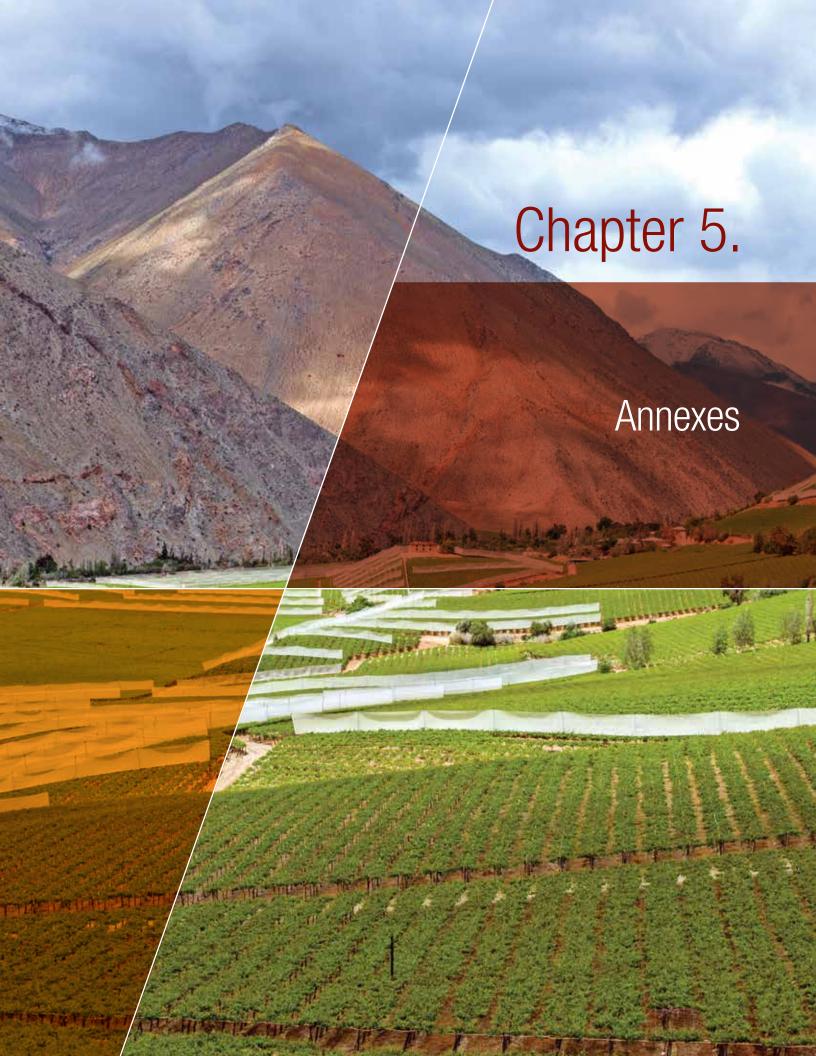
2019-2020











### 5.1. Employment and poverty indexes in LAC (see Chapter 2)

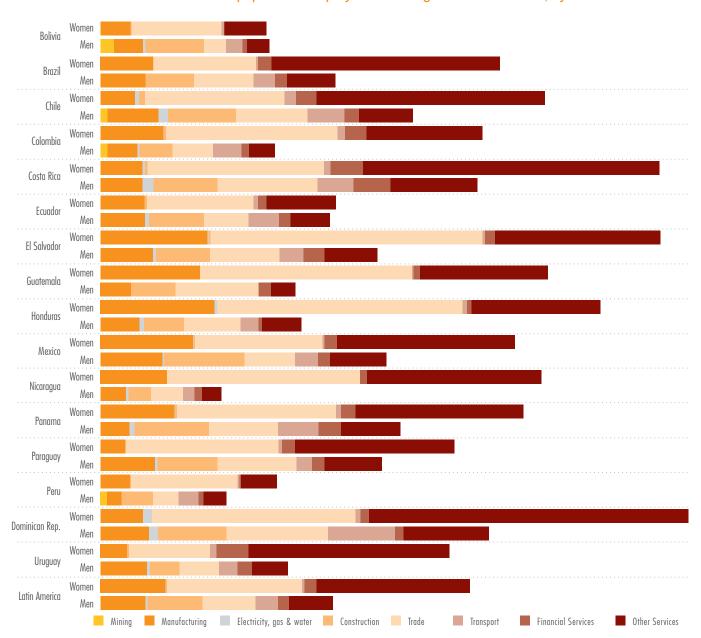
Table 5.1: Rural area employment, by sector (%).

		2000			2017	
Country	Agriculture	Industry	Services	Agriculture	Industry	Services
Bolivia	85.9	5.7	8.3	72.7	12.2	15
Brazil	75.6	7.9	16.5	53.7	13.7	32.5
Chile	63.8	12.1	24.1	42.3	17.5	39.5
Colombia	60.3	11.3	28.3	61.5	12.1	26.4
Costa Rica	37.9	19.4	42	30.5	15.9	53.5
Ecuador	67	13	19.9	62.6	13.7	23.8
El Salvador	46.9	19.2	33.9	41.2	18.3	40.5
Guatemala	56.4	17.3	26.3	57.5	14	28.6
Honduras	57.5	15.5	27.1	52.5	15.9	31.6
Mexico	57.1	19.1	23.8	45.9	20.9	33.2
Nicaragua	64.4	11.1	24.4	67	9.7	23.3
Panama	43.1	14.4	42.5	45	16.4	38.6
Paraguay	66.5	11.7	21.8	50.7	14.3	35
Peru	74.7	8	17.4	75.6	7.7	16.6
Dominican Republic	37.4	16.8	45.8	28.3	17.2	54.5
Uruguay	70.1	10.3	19.7	60.4	10.6	29
Latin America (weighted average)	66.1	12.2	21.7	54.6	15.2	30.2
Latin America (simple average)	60.5	13.3	26.2	53	14.4	32.6

Source: Prepared by author, based on CEPALSTAT data.

### 5.2. Urban-rural socioeconomic indicators (see Section 3.1)

Figure 5.1: Latin America, 2017, 16 countries: Structure of the rural population employed in non-agricultural activities, by sex



Source: Prepared by the author, using CEPALSTAT data, 8 August 2019.

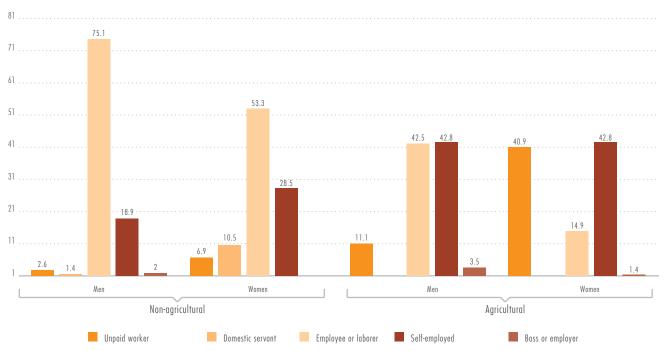
Note: The information used for Guatemala and Nicaragua was from 2014. The information used for Mexico and Honduras was from 2016. A weighted average was used for Latin America. Figures below 1 percent were removed from the graph for easier visualization.

Table 5.2: Poverty and extreme poverty rates in LAC (%)

			Extreme Poverty			
		Urban	·		Rural	
Country	2000	2014	2017	2000	2017	2017
Argentina	11.2	3.3	2.8			
Bolivia	15.4	5.6	6.5	65	34.9	38.6
Brazil	5.6	2.6	4.3	16.5	7.7	12.9
Chile	4.9	1.7	1.4	10.2	2.5	1.8
Colombia	17.1	7.5	7.4	42.7	26.7	22.9
Costa Rica	2.9	2.7	2.7	7.9	7.8	4.9
Ecuador	14.3	3.4	3	30.8	9.7	13
El Salvador	8	5.5	4.1	30.8	21.9	14.7
Guatemala	3.8	7.2	7.2	25	23.4	23.4
Honduras	11.7	12.2	11.4	40.8	27	27.5
Mexico	6.1	8.9	7.6	36.6	26.3	25
Nicaragua	25.2	8.3	8.3	50.6	32.3	32.3
Panama	5.7	1.9	1.9	25	24.2	20.4
Paraguay	3.5	2.7	2.2	24.4	15.3	12.1
Peru		1.9	1.7	35.7	15.5	16.6
Dominican Republic	5.7	7.9	7.3	15.8	16	13
Uruguay	1.2	0.2	0.1		0.4	0.1
Latin America	7.3	5.1	7.8	25.1	18.6	20.4
			Poverty	•		
		Urban	1 010.11		Rural	
Country	2000	2014	2017	2000	2017	2017
Argentina	50	24.9	18.7	2000	2017	20.7
Bolivia	55.7	24.5	25.4	85.2	53.9	57.1
Brazil	35.1	14.7	18	55.5	26.8	31.6
Chile	38.7	13.9	10.9	12.7	9.4	01.0
Colombia	49	26	25.9	67.6	48	43.1
Costa Rica	20.1	13.6	13	38	27.9	20.8
Ecuador	48	19.9	18	63.7	29.2	33
El Salvador	35	33.9	28.3	68.9	62.1	52.2
Guatemala	29.8	34.9	34.9	68.5	65.8	65.8
Honduras	40.2	45.2	44	72.4	66.8	64
Mexico	39.8	40.1	38.9	75.3	61.8	59.6
Nicaragua	57	36.5	36.5	76.4	59.8	59.8
Panama	20	9.7	8.3	45.7	40	35.5
Paraguay	21.8	14.3	13.8	56.2	34.5	34
. a. aguay	21.0			00.2	40.4	41.4
Peru		128	1/4			
Peru Dominican Republic	25	12.8 30.6	12.4 25.5	44 7		
Peru  Dominican Republic  Uruguay	25 10.9	30.6 4.5	25.5 2.7	44.7	41.3	34.9

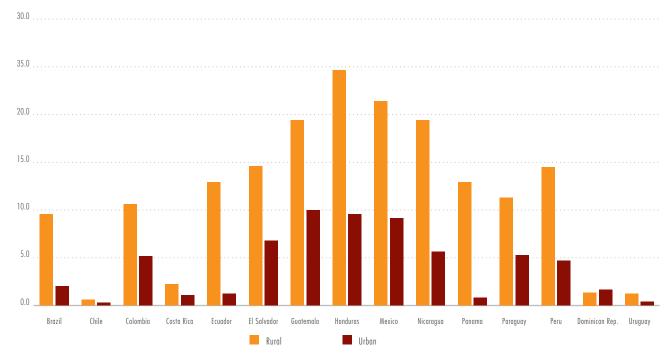
Source: Prepared by author, based on CEPALSTAT data.

Figure 5.2: Latin America, 2010, 12 countries: Labor activity of the employed rural population, by sector, occupational category and sex



Source: Using special tabulations from the FAO/RLC Office, based on Household Surveys in the respective countries in 2010, with the exception of Brazil and Chile, which were surveyed in 2009.

Figure 5.3: Child labor, percentage of children 10 - 14 years of age, 2015



Source: Prepared using data from the Center of Distributive Labor and Social Studies of the National University of La Plata, sponsored by the World Bank. 16 July 2019.

70 60 50 40 30 20 10 Bolivia Brazil Chile Colombia Costa Rica Ecuador Honduras Mexico Nicaragua Panama Paraguay Venezuela Rural indigenous Urbana non-indigenous

Figure 5.4: Infant mortality rate (every 1000 births), 2000-2005

Source: Prepared using data from Jimenez et al. 2007. La reducción de la mortalidad infantil en América Latina y el Caribe: Avance dispar que requiere respuestas variadas. Desafíos 6:4-9, December. CEPAL.

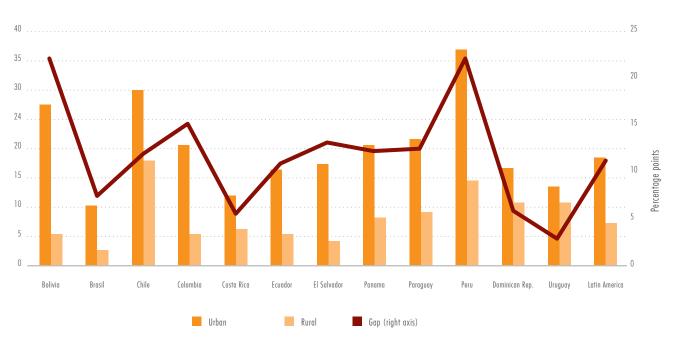


Figure 5.5: Percentage of the population 15 - 24 years of age with 13 or more years of schooling, 2017

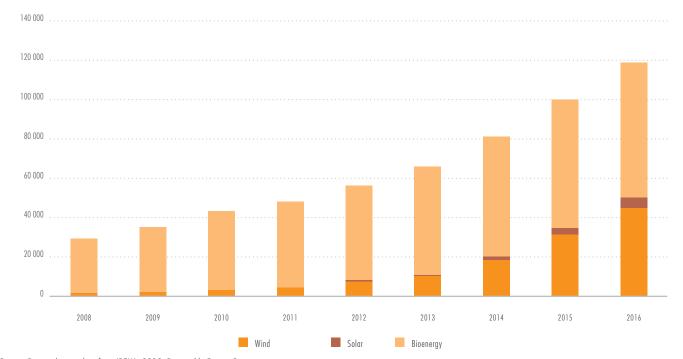
Source: Prepared by the author, using CEPALSTAT data, 16 July 2019.

15 10 5 Puerto Rico Brazil Guatemala Nicaragua Panama SSt. Lucia Ecuador El Salvador Jamaica Mexico Dominican Republic St. Kitts & Nevis Uruguay Chile Trinidad & Tobago Belize

Figure 5.6: Percentage of rural women that are owners of agricultural land, 1998-2012

Source: Based on FAO data. 2007. Atlas de las mujeres rurales de América Latina y el Caribe: Al tiempo de la vida y los hechos.





Source: Prepared using data from IRENA, 2018. Renewable Energy Statistics.

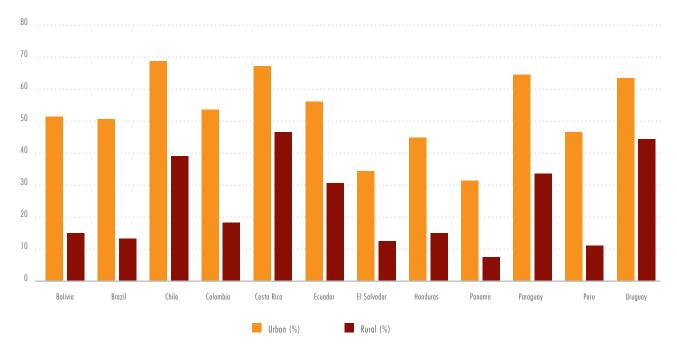


Figure 5.8: Percentage internet use, 2015

Source: Prepared using data from Saravia-Matus and Aguirre, 2019.

### 5.3. Agroecological technologies applied to primary production (see section 3.2.1)

- **1. COLLABORATIVE WORK:** Agroecology relies on collective processes. Peer to peer learning, horizontal extension (producer / producer), associative projects.
- **2. TRADITIONAL KNOWLEDGE:** Taking advantage of the valuable cognitive experience of farmers, which must be mobilized and combined with new knowledge.
- **3. SHORT CIRCUITS:** The sale of products at local fairs and other short circuits allows families to generate income, some of which can be reinvested to make new investments. These short circuits also generate new social bonds and transform food systems (see section 3.2.7 on p.62).
- **4. ASSOCIATED CROPS:** Crop rotation favors the increase of carbon and nitrogen in the soil, as well as weed control and erosion control.

- **5. CLIMATE ADAPTATION:** The incorporation of organic matter contributes to the storage of greenhouse gases in the soil, improving its ability to retain water.
- **6. SOIL BIODIVERSITY:** Living soil organisms improve soil structure and water retention, facilitate rooting and erosion control. They also play an active role in decomposition, organic matter and in the generation of nutrients.
- **7. BIODIVERSITY:** The protection of wildlife and natural vegetation plays a critical role in maintaining environmental balances.
- **8. NITROGEN FIXING:** This element plays a central role in plant nutrition and can be produced by certain types of plants (especially legumes), from the fixation of nitrogen gas.
- **9.AGRICULTURE / LIVESTOCK INTEGRATION:** The use of waste from one or another subsystem generates synergies and increases the value of a resource that is often not used.
- **10. ENERGY:** Use of biomass as an energy source, including waste, firewood, methane. Other energy sources are also important (hydro, solar, wind, among others).
- **11. BIOLOGICAL CONTROL:** Use of insects and other living organisms to control pests and diseases, as a means of creating a natural balance, rather than resorting to eradication.
- **12. AGROFORESTERY:** The promotion of tree planting in livestock and crop systems fosters biodiversity, erosion control, firewood generation and wind control, among other benefits.
- **13. POLLINATION:** Pollinating insects, especially bees, play a key role in the reproduction of plant species.
- **14. WATER MANAGEMENT:** Agroecology makes rational and optimal use of this resource, in keeping with an integrated vision of ecosystems. It promotes water storage in the soil through practices that limit runoff, erosion and evapotranspiration.
- **15. TRADITIONAL SEEDS, QUALITY SEEDS:** the valuing of traditional seeds and the creation of new varieties enriches biodiversity and shapes natural ecosystems. The use of healthy seeds reduces the use of phytosanitary products.

Source: FAO 2018c.

### 5.4. Public purchases (see section 3.2.7)

Table 5.3. Public procurement programs for FF

		Type of Initiative	
Country	FF purchasing experiences	Enactment of Laws/ Decrees for FF purchases	Establishment of a specific institutional framework for FF purchases
Central America	P4P project (WFP) "Glass of Milk" pilot; "Cooperación Brasil" pilot	Public procurement law, in general	Inter-institutional committee for operation of pilot programs
Brazil	30 % of the food supplied through the PNAE program must be from small farmers	Law No. 10,696 of 2003 (PAA); Federal Law 11,974 / 09 (30 % of the PNAE food supplied)	Food Acquisition Program (PPA)
Uruguay	IFAD pilot	Law No. 18,362 of 2008 established the "Public Procurement Program for Development"; Law No. 19,292 declared that family agricultural production and artisanal fishing were matters of public interest.	
Colombia	At the municipal level: the Antioquia Food and Nutrition Improvement Plan (MANA) of the Government of Antioquia	Decree 2474/08 (Objective selection of food suppliers.)	
Paraguay	No direct public purchases from FF are made for the <i>Glass of Milk</i> and <i>School Lunch</i> pilot programs, neither in the capital city or in inland areas.	Decree No. 1,056 / 13; Decree No. 11,464 / 07 (National Registry of Family Farming); Decree No. 3,000 / 15 (Simplified process for the acquisition of agricultural products from family farms; Law No. 5,210 / 14 (School Feeding and Health Control programs).	Inter-institutional technical committee
Peru	National Cuna Más Program of the Ministry of Development and Social Inclusion	State Procurement Law. There is no clear policy to support local purchases.	
	PNAE Qali Warma, local purchases.		
Bolivia	At the national level: by the Ministry of Health, for the breastfeeding subsidy.  At the municipal level: for school lunches.	Decree No. 27328/03 Compro Boliviano (Buy Bolivian); Law No. 144/11 of the Agricultural Community Production Revolution	Food Production Support Company (EMAPA)
Ecuador	Direct purchases from small farmers through inclusive fairs.	Organic Law of the National Public Procurement System, LOSNCP; Executive Decree No. 1112; Constitution of the Republic 2008 (Articles 12, 288 and 336) and the Organic Law of the Food Sovereignty Regime (Article 30).	Food Provision Program (PPA)

Source: Based on FAOSTAT data.

### 5.5. The dynamics of LAC's trade in products (see Section 3.2.5)

Table 5.4. The 32 crops and livestock products whose export growth outpaced soy (1991-2016, annual growth rates)

Product	Compound annual growth rate (%, 1991-2016)	Trade value (2016, US\$ million)	Largest trade partner (2016)	(% of LAC excl. largest partner)	Largest exporter (LAC, 2016)	(% of LAC excl. largest exporter)
1 Meat, pork (prep.)	61.7	1981	Russian Federation	25	Brazil	65
2 Cranberries	41.6	677	USA	60	Chile	100
3 Potatoes, frozen	36.1	183	Brazil	81	Argentina	97
4 Meat, dried N.E.S.	36.1	417	Netherlands	55	Brazil	96
5 Meat, chicken, canned	24.5	642	Netherlands	37	Brazil	91
6 Cherries	20.9	820	China	82	Chile	98
7 Palm Oil	20.5	1282	Netherlands	32	Honduras	29
8 Avocados	19.7	2936	USA	59	Mexico	72
9 Baby food	19.1	484	Brazil	17	Mexico	50
10 Oil, palm kernel	18.7	216	Netherlands	46	Colombia	43
11 Fat N.E.S., prepared	17.9	203	Brazil	29	Uruguay	41
12 Pet food	17.7	294	Chile	27	Argentina	39
13 Nuts, shelled	17.3	490	USA	69	Mexico	69
14 Barley	15.9	613	Saudi Arabia	43	Argentina	98
15 Flour, maize	15.9	194	USA	42	Mexico	43
16 Lettuce and chicory	15.8	164	USA	98	Mexico	99
17 Meat, pork, sausages	14.7	166	Angola	16	Brazil	71
18 Cow's milk, whole (dried)	14.6	833	Brazil	42	Uruguay	39
19 Food waste	14.2	510	Chile	13	Brazil	37
20 Brazil nuts, shelled	14.2	205	USA	57	Peru	89
21 Cauliflower and broccoli	14.0	232	USA	97	Mexico	100
22 Wine	13.6	2688	USA	20	Chile	69
23 Pastry	13.5	1731	USA	66	Mexico	67
24 Papayas	13.2	176	USA	67	Mexico	63
25 Maize	12.9	8874	Viet Nam	14	Argentina	47

26 Feed, vegetable products N.E.S.	12.5	333	UK	16	Argentina	99
27 Lemons and limes	12.4	991	USA	48	Mexico	46
28 Nuts in the shell	12.4	353	USA	54	Mexico	72
29 Asparagus	12.4	808	USA	81	Peru	52
30 Juice, orange	12.2	850	USA	45	Brazil	57
31 Breakfast cereals	12.2	515	USA	36	Mexico	52
32 Meat, turkey	12.0	326	USA	19	Brazil	54
33 Soybeans	11.8	25284	China	69	Brazil	77

Source: Based on FAOSTAT data.

Note: Ordered by decreasing export value CAGR (1991-2016). Products with a current export value of less than US\$ 150 million are not included.

## 5.6. Social and production inclusion (see section 3.2.4)

Figure 5.9. Linkages between social welfare, household consumption, production activities and the local economy

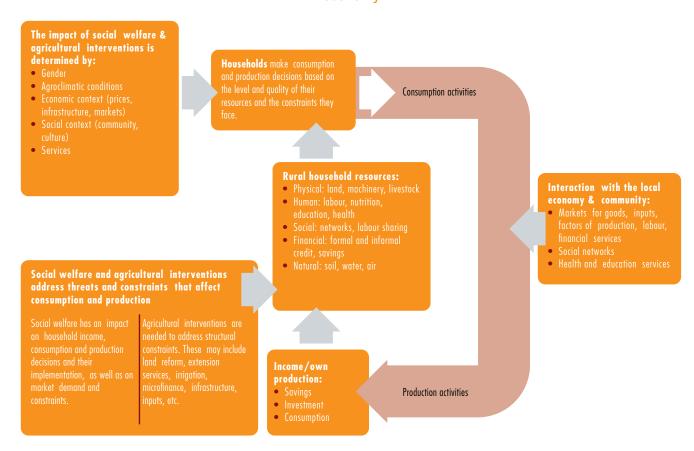


Table 5.5: Differentiated objectives and pathways for social and production inclusion in family farming

Table 5.3	o: Differentiated objectives and pa	lunways for social and production	inclusion in family familing
	Subsistence family farming	In-transition family farming	Consolidated family farming
	Non-contribution-based social welfare:  • Protect the consumption of basic	Combination of contribution-based and non-contribution-based social welfare:	Social security (They are now in a position to make their own contributions to contain their risks)
	goods	<ul> <li>Protect the consumer</li> </ul>	Make the application of standards
	Promote the SANN	Promote medium-term economic planning	in relation to decent employment more effective, considering that this
Social welfare policies for	Promote human capital development	Promote strategic investments with	segment uses more labor and more seasonal workers.
family farming households	<ul> <li>Mitigate the effects of disasters and catastrophes</li> </ul>	production inclusion mechanisms	Code Hai Hornord
	- Duranaka ankura yana umah'a anad	Social security and insurance: Reinforce	
	<ul> <li>Promote entrepreneurship and profitable and ambitious strategies</li> </ul>	efforts to prepare for climate, economic and social contingencies	
	Creation of capital (capital formation)  • Capacity-building	Management and organizational strengthening (in terms of production, associations, and community groups)	Production/ trade linkages  • Access to financial investment
	Supusity building		mechanisms
	<ul> <li>Production improvements and own consumption</li> </ul>	<ul> <li>Promotion of the formation of associations and organizations</li> </ul>	Capacity-building (investment and management)
Production policies for family farming	<ul><li>Access to production assets and inputs</li><li>Regularization of assets and records</li></ul>	<ul> <li>Capacity-building and business management (with women playing a key role)</li> </ul>	Production diversification
ranning ranning	for recognition by users	key lule)	<ul> <li>Access to new markets</li> </ul>
		<ul> <li>Market access</li> </ul>	<ul> <li>Production and trade partnerships</li> </ul>
		Training	Troduction and trade partite strips
		Access to production assets	<ul> <li>Generation of employment opportunities</li> </ul>
		Differentiated financial mechanisms	

### 5.7. Towards a sustainable bioeconomy: lessons learned from case studies (see chapter 4)<sup>5</sup>

### **Food Security**

- The impact of bioeconomy initiatives on food security is not automatically determined based solely on the use of food or non-food raw materials. This should be considered in addressing problems such as the debate on foods versus the production of fuels, which has arisen with respect to biofuels.
- 2 The production of bioproducts should contribute to rather than impede food production. This can be achieved by intensifying land use, using different types of terrain (including marginal land) to produce food and non-foods products, and by shifting to integrated production systems that combine the production of food and non-food products, such as integrated food and energy systems. In so doing, two key aspects should be addressed, namely:
  - a) The notion of what constitutes marginal land is complex (For example, should land that is used only occasionally be considered marginal?) and dynamic, as it can change over time. Thus, the decision to classify land as marginal and to define its use, should arise out of an inclusive process, involving all principal stakeholders. In determining its use, one should carefully consider actions that will be taken when the land is no longer marginal and when other options (e.g. for food production) may be available.
  - b) Special attention should be paid to possible competing uses (e.g. soil management, animal feed, bioenergy and bioproducts) of food production residue. Indeed, the growing demand for various bioproducts may increase competition for biomass and natural resources among various sectors of the bioeconomy, including the food sector. Actual and potential uses of residue should always be included in any feasibility analysis of bioeconomy initiatives based on the use of residue, since it can be the source of important goods and services for communities.

- 3. Accessing food often poses a challenge. Improved access can be achieved by increasing land tenancy security—a precondition for bioeconomy development which is often overlooked—and by adopting technologies that make optimal use of all components of biomass, thereby creating opportunities to obtain greater revenue from food and nonfood products.
- 4. The optimal use of food is another dimension of food security to which the development of the bioeconomy can contribute, through: (i) better access to sustainable bioenergy for cooking; (ii) increased production of bionutrients; (iii) improved knowledge about healthy microbiomes.
- 5. Traditional and innovative processes and technologies used in the bioeconomy can facilitate the efficient and effective use of biomass, by utilizing all components of a given raw material, which in many cases was originally a food product. Local knowledge, including from indigenous communities, should be respected and valued, since it can contribute significantly to the development of the bioeconomy, particularly to the production of biocosmetics and biopharmaceutical products.

### Natural resource management

- 1. The sustainable management of natural resources undoubtedly affects the sustainable development of the bioeconomy. It is often considered to be a matter that should be addressed in order to guarantee sustainable production and processing of biomass, and thus, good practices related to the sustainable management of land, water, forests and biodiversity are often part of bioeconomy operations. However, direct and indirect changes in land use are usually not considered when the local development of the bioeconomy calls for a modification in the production of biomass.
- The sustainable management of natural resources and inputs related to bioproducts can benefit the environment

Summary of lessons learned from the FAO project "Toward Sustainable Bioeconomy Guidelines", with the support of the Federal Ministry of Food and Agriculture of Germany (BMEL), based on [Gomez San Juan, M., Bogdanski and Dubois 2019].

and supports commercial arguments in favor of bioeconomy initiatives.

- Small-scale biomass producers, including indigenous people that are the custodians, users and beneficiaries of natural resources, must be duly considered and given the power to make decisions regarding the development of the bioeconomy.
- 4. Sustainable management of natural resources is a precondition to ensuring that the bioeconomy can assist in tackling climate change-related challenges.

### Climate change

- 1. Bioproducts are not climate-smart per se. A shift towards low-emission biomass production and the climate-smart management of natural resources needed to bring about this shift, as well as the use of clean energy throughout the bioeconomy value chain, are the major factors that will determine the extent to which the bioeconomy will contribute to mitigating the effects of climate change. Other factors are reduced deforestation, rehabilitation of degraded lands, carbon capture and use and the elimination of practices involving the burning of residue.
- 2. Although it is not stated openly, the bioeconomy usually improves adaptation by:
  - a) sustainably managing natural resources, thereby boosting the resilience of the local environment; and
  - b) increasing the standard of living by generating additional opportunities for income and employment through the production and trading of bioproducts.

### Responsible production and consumption

The lessons learned in this area primarily point to the importance of establishing linkages between producers and consumers during different phases of bioeconomy activities, in order to ensure that a balance is created between their respective rights, responsibilities and benefits in terms of the bioeconomy, which can be achieved in different ways:

1. By adopting a value web approach rather than a value chain approach, since the former considers two ways of addressing

the growing demand for biomass and the competition that arises as a result of the development of the bioeconomy: greater integration between all components of the value web and the promotion of the cascading use of biomass. It also calls for the establishment of partnerships that promote and link production and responsible consumption throughout the entire bioeconomy value web to ensure efficiency and inclusion. Moreover, these partnerships will be a means of developing bioproduct markets through purchase agreements. This includes contract farming and partnerships between providers and investors in technological intellectual property, business to business partnerships and partnerships between public entities and manufacturers of bioproducts (e.g. public procurement programs).

- 2. By creating regional bioeconomy clusters that promote the forging of partnerships at different levels.
- 3. Certification is very limited in terms of scope, affordability and feasibility. By itself, it cannot guarantee the sustainability of bioeconomy value chains to any great extent. Certification systems should be combined with other types of support (e.g. pOlicies, regulations, institutions and communication activities) to create an enabling environment that can support expansion of bioeconomy certification initiatives.

### **Economic growth**

### **Value Added**

- The use of multi-purpose raw materials may contribute to adding value to biomass, since it enables the manufacture of various bioproducts. It also allows for the combined production of new and traditional products, reducing the risks associated with new technologies.
- 2. Production of various bioproducts may occur in a sequential manner (cascade approach) or simultaneously, such as in some biorefinery operations. Decisions to determine the cascading sequence of biomass uses should not be made solely on the basis of adding economic value. Other criteria (such as carbon storage, local uses such as dendroenergy for cooking, and processing costs) can be important for various stakeholders. Thus, all decisions regarding sequencing in biomass processing should be the result of an inclusive local process involving multiple stakeholders.

### **Employment**

- New bioeconomy activities offer numerous employment opportunities, particularly for rural women and youth. Nonetheless, training is often an essential requirement to generate employment through bioeconomy initiatives that introduce new technologies, particularly in the biomass processing phase.
- In great measure, urban populations are responsible for driving the demand for bioproducts. Economic resilience can be bolstered by strengthening the linkages between the rural and urban environments and improving territorial cohesion by way of sound local value chains.
- 3. There are potential risks associated with employment in the new bioeconomy.
  - a) Competition may arise between traditional jobs (for example, production of traditional food products) and the new types of jobs (such as in the bioproduct value chains). New technologies may also reduce employment opportunities, whereas more conventional technologies that are more labor-intensive may be less profitable.
  - b) Attention may be focused on increasing the number of job opportunities, while paying scant regard to guaranteeing the quality of these new jobs.

### Circular economy

1. Microbiological and biotechnological processes are key elements in the application of circular principles in the bioeconomy. They involve the use and ever-increasing production of bioproducts linked to carbon dioxide, through carbon capture and use. The application of circular principles often fosters the increased sustainability of bioeconomy initiatives. Thus, the challenges to be faced are related to the possible competition between the various uses of residue and the costs and logistics that this implies. The quality of bioproducts influences the extent to which they are biodegradable and compostable. These characteristics should not be taken for granted, since they can significantly affect the successful application of circular principles in the bioeconomy.

### Good governance

Governance in the production and use of biomass refers to decision-making processes that should be established, that is the roles, rights and responsibilities of various actors, as well as the requisite types of policies, regulations, institutions and information and communication channels.

A review of case studies has revealed that the following factors have proven successful in the governance of the bioeconomy.

- 1. Inclusive decision-making in all relevant spheres is critical to the design and implementation of the bioeconomy.
- 2. A territorial/ landscape approach can contribute to the efficient production and use of biomass and the related inputs within a territory.
- 3. Regional bioeconomy clusters can assist in the application of circular bioeconomy practices.
- 4. Contract farming benefits biomass producers, since it can provide them with a guaranteed market and in some instances, with technical assistance. It also assists biomass manufacturers and retailers, as it affords them a continuous and regular supply of material. As mentioned before, governments usually become involved to ensure that these contracts are fair for both parties.
- 5. A supra-ministerial organization close to the highest level of Government can coordinate national bioeconomy efforts.
- Public mechanisms (e.g. public procurement programs, coherent policies regarding incentives and taxes or public awareness campaigns) should promote consumer acceptance.
- 7. Collaboration mechanisms between stakeholders, including public-private partnerships and bioeconomy platforms should contribute to the transparent sharing of information and knowledge, while playing a pivotal role in decision-making. Defined, profitable and inclusive targets to monitor and assess progress and sustainability should be flexible enough to be adjusted in keeping with the objectives of a country's bioeconomy strategy.





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