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The agroecological transition of agricultural systems in the Global South

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Public policies supporting agroecology in Latin America: lessons and perspectives

*Jean-François Le Coq, Éric Sabourin, Muriel Bonin, Sandrine Fréguin Gresh,
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Latin America and the Caribbean are regions especially interesting to analyse the emergence and development of alternative food and production models with the aim of addressing environmental, social, economic and public health issues.

Since the 1960s, this wider region has been threatened by the excesses of the conventional agriculture based on the Green Revolution, whose agro-industrial production models are not concerned with environmental issues and which have taken advantage of an institutional framework that is much less strict than in Europe and North America. This conventional agriculture, intensive in chemical inputs and water, produces pesticide-laden food that is potentially harmful for public health (Segrelles, 2001; Carrasco *et al.*, 2012; HLPE, 2015). Moreover, such systems are frequently set up on land grabbed from indigenous and rural people (Borras *et al.*, 2011; Baquero and Gómez, 2014).

In such a context, alternative farming and agrifood models have been proposed by producers, researchers and social movements, and, in some countries, even by public authorities. Some of these actors are advocating for an agroecological transition supported by a new generation of public policies (Collado *et al.*, 2013; Sabourin *et al.*, 2017).

This chapter proposes to examine the policies that favour the agroecological transition in Latin America and the Caribbean. It aims to understand how these policies have emerged and what are their challenges and opportunities.

This chapter is based on a study conducted in 2016 and 2017 by a group of researchers from the Network of Public Policy and Rural Development in Latin America and the Caribbean (PP-AL), which undertook case studies in eight countries: Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Mexico, and Nicaragua)¹. While

1. These case studies are presented in Sabourin *et al.*, 2017.

conducted at the national levels by different researchers, these studies followed a common analytical framework, which included the analysis of five components:

- the use of environment-friendly agriculture concepts in policies;
- the trajectory of social movements and policies;
- the content of the current policies;
- their effects at sectoral or territorial levels;
- the main challenges and perspectives.

In order to discuss these issues, these studies applied bibliographic analyses (research literature and policy documents) and conducted interviews with representatives of social movements and with policymakers in the each country.

CONCEPTS USED AND THEIR INTEGRATION INTO POLICIES

The agroecological movements in Latin America propose a radical transformation of food systems in order to address environmental and social issues (Altieri, 2017). They oppose a conventional and primarily export-oriented agriculture (Toledo, 2012). Agroecology was popularized due to the work of researchers such as Miguel Altieri and Stephen Gliessman, and was championed by coalitions of social organizations that are pressurizing governments to formulate public policies to support it. The policy instruments that contribute to agroecology are varied and often part of programmes that also support organic and sustainable agriculture.

Main conceptualizations of an environment-friendly agriculture

Various actors and public policies in Latin America and the Caribbean are pushing for a transition to a more environment-friendly agriculture by promoting three main agricultural models: organic agriculture, agroecology, and sustainable agriculture. These models, which coexist in different countries of this region, emerged at different times (Figure 17.1).

Organic agriculture

Organic agriculture is the oldest of these concepts as it dates back to the 1920s (Vogt, 2007). The organic agriculture (*agricultura orgánica* in Spanish and *agriculture biologique* in French) movement aims at establishing production systems that conserve the soil and ecosystems, preserve human health, and are based on ecological processes, maintenance of biodiversity, and the specificity of local conditions (Ifoam, 2008). This agricultural model is today defined by national and international standards that are associated with certification processes. Standards regulating organic agriculture prohibit the use of non-organic inputs (chemical fertilizers, synthetic phytosanitary products and genetically modified organisms). However, as it permits the use of certified organic inputs, this model is often associated with the idea of a substitution of chemical inputs by non-chemical ones, without calling into question the modern and globalized agrifood system. In Latin America, organic products are generally oriented towards export markets.

The institutionalization of organic agriculture began in the 1980s with the promulgation of regulatory standards promoted by the International Federation of Organic

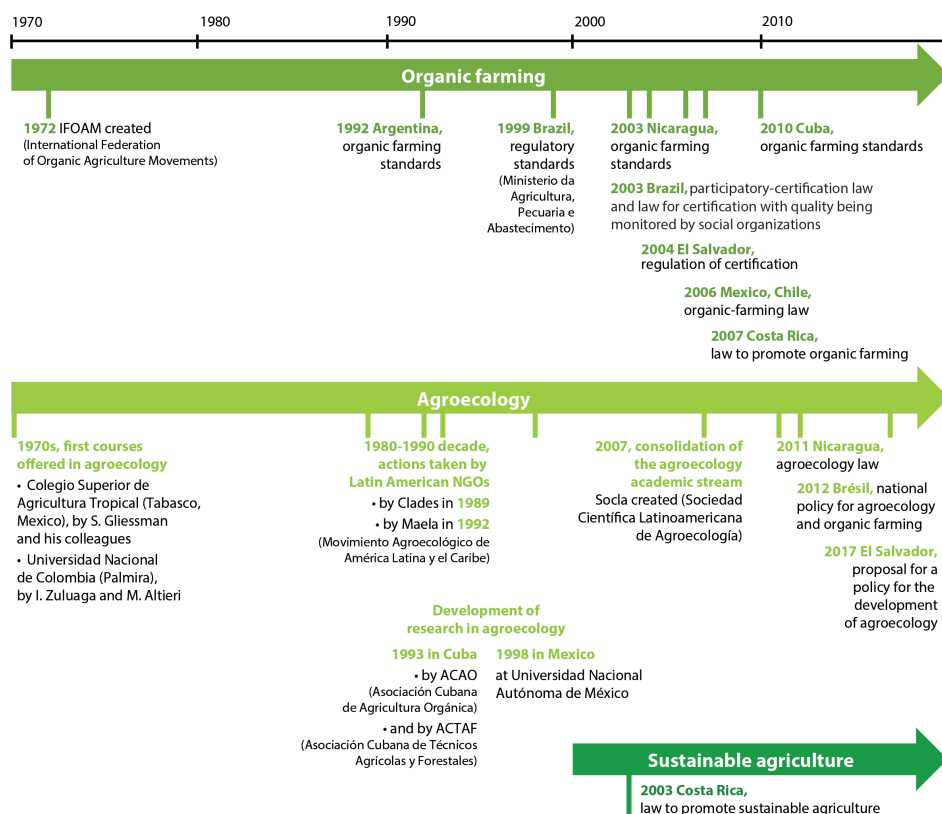


Figure 17.1. The dynamics of the emergence and institutionalization of different environment-friendly agricultural concepts in Latin America and the Caribbean. (Based on Altieri, 2015 and Sabourin *et al.*, 2018).

Agriculture Movements (IFOAM). Organic agriculture was then incorporated into the normative regulatory framework of Latin American countries in the 1990s: organic agriculture regime of Argentina in 1992; organic agriculture standard of the Brazilian Ministry of Agriculture, Livestock, and Supply in 1999; organic production standard of Nicaragua in 2003; organic certification scheme of El Salvador in 2004; organic production standard of Cuba in 2010, etc. In addition to these normative frameworks, some countries have also developed specific policies promoting organic agriculture such as the laws on organic agriculture in Chile (2006), Mexico (2007) and Costa Rica (2007).

Agroecology

Latin American agroecology (*agroecología*) is a more recent proposition, dating back to the 1970s, centred on the idea that environmental challenges cannot be disconnected from the profound transformations taking place in the industrial agrifood system. Just like organic agriculture, agroecology is averse to the use of non-organic inputs and espouses the importance of production systems based on principles that conserve ecosystems. Nevertheless, it also advocates a greater autonomy for producers with respect to upstream and downstream markets and emphasizes the principle of

recycling within cultivated ecosystems (Altieri and Toledo, 2011; Gliessman, 2006). Accordingly, it proposes a profound modification of the agrifood system and of the relationships between farmers and consumers by supporting short circuits (direct sales, local markets) and food security and sovereignty at the territorial scale. In addition to specifying aspects pertaining to the technical dimensions of farming, agroecology proposes an integral vision that combines social, environmental, economic and cultural characteristics, defining a new model of sustainable rural development (Maela, 2017). It is thus opposed to the mainly export-oriented business model based on principles of the Green Revolution (Toledo, 2012).

The institutionalization of this concept in Latin America did not imply the emergence of specific standards in response to market demands even though its incorporation into policies took three forms. First, in the emblematic case of Cuba, before it became a proactive system driven by a group of researchers and academics, as well as by rural movements and urban agriculture, agroecology was a response to the crisis of conventional agriculture resulting from the US embargo and later from the dissolution of the Soviet Union. While the term 'agroecology' does not appear explicitly in existing policies, the principles of agroecology have been incorporated into policies for food security and sovereignty, nutrition and health – especially in public programmes for organic pest control, urban and peri-urban agriculture, and experimentation and technical assistance (Vázquez *et al.*, 2017).

A second case is associated with countries in which institutionalization has been reflected in the formulation of national policies that are explicitly dedicated to promote agroecology, such as the 2012 National Policy on Agroecology and Organic Production in Brazil, or the 2011 law on agroecology in Nicaragua.

Finally, the concept of agroecology is also present in other countries, such as Mexico and to a lesser extent Argentina, Chile and Costa Rica, associated with the revitalization of smallholder agriculture and the conservation of indigenous traditions and practices such as crop associations (e.g. maize/bean called *milpa*) and social forms of production (mutual support, *tequio*, etc.) and living (*buen vivir*). In these cases, agroecology is not subject of specific policies.

Sustainable agriculture

Sustainable agriculture (*agricultura sostenible*) emerged even more recently, in the 1990s, in some countries of Latin America. This concept proposes *ad hoc* adjustments to the conventional production systems through the adoption of specific techniques aimed at providing or conserving environmental services. It does not call for a halt to the use of chemical inputs or GMOs, nor does it call into question the main principles of the industrial agrifood system.

The concept of sustainable agriculture emerged from the heightened awareness of environmental issues following the Rio de Janeiro Earth Summit in 1992, and of the dangers of excessive use of chemical inputs in conventional agriculture. This concept has been mainly mobilized in three of the countries studied (Costa Rica, Chile and Mexico). Until now, it has resulted in policies promoting environmental services and the introduction of financial incentives to encourage conventional farmers to adopt environment-friendly practices.

Analysis of the three concepts

While all these three concepts propose a transition to a more environment-friendly agriculture, they demonstrate different degrees of integration and institutionalization in each country. Furthermore, they fundamentally differ in the way they incorporate environmental issues into production systems (modalities of ‘greening’) and in the types of farmers, food systems and market insertion they support (Table 17.1). Nevertheless, in our analysis of policies supporting agroecology, we will include all those that refer to any one of these three concepts, given that they contribute to the agroecological transition to the extent they promote ‘agroecological practices’ – even if they do not necessarily encompass all the dimensions of the agroecological concept supported by social movement in Latin America.

Table 17.1. Main characteristics of the three agricultural models that incorporate the environmental dimension and are promoted in Latin America and the Caribbean.

	Indicators	Agroecology in Latin America	Organic agriculture	Sustainable agriculture
At the level of the production systems and farming practices	Scale of changes of practices	Plots, farms, landscapes, territories	Plot or farm	Plot
	Inputs	Limited recourse to inputs and originating from organic processes (recycling principle)	From biological and certified processes	Reasoned use of chemical inputs
	Genetically modified organisms (GMO) seeds	No	No	Yes
	Diversification of production	Yes	Not necessarily sought	Not necessarily sought
At the level of farm types and food systems	Types of farms	Family, peasant, indigenous farming	All	All
	Market integration	Limited	Variable	Maximum
	Food system	Territorialized	Globalized	Globalized
	Labelling of products	Possible, but not necessarily sought	Yes, via certification, especially by third parties	No

Processes for formulating policies that favour agroecology

Three main complementary processes favour the construction of agendas and formulation of policies for agroecology.

Mobilization of social movements

The main process that enabled the setting of agendas and formulation of policies favourable to agroecology has been the mobilization of social movements pushing for organic agriculture or agroecology, in association with representatives and advocates of family or peasant farming, and with the support of international technical cooperation entities. This process has been decisive not only in formulating specific agroecology national policies (Brazil and Nicaragua), but also in incorporating the concept of agroecology in programmes at either the local or the regional levels (Chile, El Salvador).

In Brazil, the formulation of the National Policy for Agroecology and Organic Production in 2012 resulted from the influence of a broad 'pro-agroecology' network that was active during the two terms of former president Lula (2003-2010). The confluence of family farming, agrarian reform, and agroecological movements (with scientists and NGOs also participating) shaped the core of this network. It also benefited from the existence of participatory forums such as the National Council for Sustainable Development and Family Farming, and the National Council for Food and Nutrition Security, which enabled dialogue between government and civil society representatives. Finally, the involvement of rural women was decisive in convincing President Dilma Rousseff to create the National Policy in her first term (2011-2014) (Schmitt *et al.*, 2017).

In Nicaragua, the promulgation of the law to promote agroecological and organic agriculture in 2011 was the outcome of ten years of mobilization of a broad coalition of social movements and activist unions advocating for agroecology, organic agriculture and the defence of rural people. This movement also worked in association with academics and civil servants, and had the support of international cooperation entities (Fréguin-Gresh, 2017).

In Chile, an agroecology committee coordinated by the Agrarian Development Institute was created in response to the demands of agroecology movements formed mainly by farmer organizations (Martinez *et al.*, 2017).

In El Salvador, the policy for the promotion of agroecology presented to the government in 2017 resulted from the mobilization of a coalition that brought together NGOs and other groups advocating for agroecology, in association with the Rural Dialogue Group and the National Committee for Family Farming (Moran, 2017).

Response to geopolitical, economic or environmental crises

The second process that facilitated the emergence of policies favourable to the agroecological transition is associated with responses to geopolitical, economic or environmental crises. Indeed, some countries (Cuba, Argentina, Nicaragua) initiated an agroecological transition as a result of crises that affected conventional agriculture. In Cuba, agroecology constituted a response to the geopolitical crisis of 1993.

In Argentina, the financial crisis of the late 1980s, characterized by hyperinflation, encouraged the adoption of policies to support poor people and those living in rural, peri-urban and urban areas. Initiated in 1990, the *Prohuerta* programme aimed to disseminate, through a participatory approach, production of vegetables for self-consumption by facilitating access to seeds, water and markets (farmers' markets) for urban and peri-urban producers. More recently, following the 2000-2001 financial crisis, this programme has been extended to rural areas (Patrouilleau *et al.*, 2017).

Agroecology was adopted in Nicaragua, as it was in Cuba, not only as a response to the shortage of chemical inputs during the period of conflict in the 1980s, but also as an alternative to the domination of the agro-industrial capitalist model between 1960-1970. Agroecology was also promoted in response to severe environmental crises that affected the cotton agri-export production model, as well as to climate-related crises, such as the one caused by Hurricane Mitch in 1998, which completely cut off many regions of the country, preventing a large number of farmers from obtaining chemical inputs (Fréguin-Gresh, 2017).

Public initiatives

The third process refers to initiatives launched by public authorities. In some countries, such as Mexico, Chile and Costa Rica, agroecological transition policies emerged mainly because of government efforts to encourage sustainable agriculture, even though this generally happened in response to pressure from social movements and due to exigencies of meeting international environmental standards. This was the case of the Sustainable Rural Development Act of 2001 in Mexico, and the Sustainable Agriculture Promotion Act of 2002 in Costa Rica.

Similar was the case in Chile, where technical assistance and investment subsidy programmes were incorporated into the policies of the Agricultural Development Institute. Complementarily, the incorporation of an alternative certification system into the organic agriculture law allowed small family farmers to access different markets for their organic products (Martinez *et al.*, 2017).

In Costa Rica, following the initiative of a parliamentary deputy, a law promoting organic agriculture was formulated in 2007 by the Organic Agriculture Movement, with the support of officials of the Ministry of Agriculture. This law facilitated the establishment, in 2013, of a programme to recognize environmental benefits – a sort of payment for environmental services in agriculture –, encouraging the adoption of agri-environmental and organic agriculture practices (Sáenz *et al.*, 2017).

DIVERSITY OF POLICIES AND INSTRUMENTS FOR PROMOTING AGROECOLOGY

Formulating policies to promote agroecology

The processes mentioned above resulted in the introduction of various forms of support for the agroecological transition in all the Latin American countries studied. Four national policy configurations to promote agroecology can be identified.

The first type corresponds to countries with existing regulations for organic agriculture, but without any specific policy instrument for this system, even though they have policies pertaining to environmental issues and the management of natural resources, biodiversity or food security, which encourage a change in practices towards sustainable agriculture. Thus, Mexico has a law to manage organic agriculture (Organic Products Law, 2006), the Law for Sustainable Rural Development (2001) and the Law on Biosafety of Genetically Modified Organisms (2005). Chile has a law for organic agriculture (2006), which, as part of its policy of supporting family farming and promoting sustainable agriculture, incorporates agroecology principles. Finally, in addition to a law promoting organic agriculture, Costa Rica has implemented agri-environmental measures as part of its programme to recognize environmental benefits.

The second type of configuration is found in countries that already have regulations and instruments to promote organic production. They also promote agroecology with policies for food security and support for family farming (e.g. *Prohuerta* programme in Argentina).

The third type corresponds to countries that have specific policies promoting both agroecology and organic agriculture, which is the case of Brazil with its National Policy for Agroecology and Organic Production (2012) and Nicaragua with its law for the promotion of agroecology and organic agriculture (2011).

Finally, some countries support agroecology without a dedicated policy, but with policies or programmes that include support for rural agriculture or family farming (Argentina in 2001) or peasant or urban agriculture (Cuba in 1993).

Diversity of instruments for agroecology

Instruments conducive to the adoption of agroecology were introduced in all the countries studied through specific policies and/or policies for supporting family farming, urban or peri-urban agriculture, food security, natural resource management, agri-environmental issues or climate change response strategies. Four major types of instruments are currently found in Latin America.

First, instruments to manage innovations and knowledge systems for an agroecological transition. The aim of such cognitive instruments is to build farmers' capabilities to manage their farms and territories using agroecological principles. These instruments are present in most of the countries studied, along with networks for knowledge dissemination – such as 'farmer-to-farmer' (*campesino a campesino*) networks in Nicaragua – in which farmers test new techniques together and exchange and preserve them. In Chile, programmes of the Institute of Agricultural Development not only have the goal of strengthening these exchange networks but also to impart value to products from peasant production systems through the 'Farmer's Hand' (*Manos Campesinas*) label (Martinez *et al.*, 2017). Similarly, in Mexico, programmes such as the Sustainable Modernization of Traditional Agriculture (Masagro) have been launched and implemented since 2010 (Pulido and Chapela, 2017).

Second, instruments that facilitates access to land and water. They are present in varying degrees of intensity in the countries of the region and have taken the form of land redistribution and legalization programmes. Even though they no longer exist in most countries, the ongoing Brazilian and Cuban programmes are noteworthy.

Third, instruments concerning regulation and promotion of products and market insertion. Present in most of the countries, they help to promote organic agriculture and agroecology by means of two mechanisms: on the one hand, regulations and standards, and, on the other, programmes for the promotion of outlets for organic and agroecological products. The former are present in all the countries studied, in the form of organic agriculture regulations that determine product specifications and certification rules. While in the majority of countries, most third-party certifications are oriented towards international markets, some countries have implemented alternative certification processes for national markets, such as participatory certification in Costa Rica or certification with quality being monitored by social organizations (Brazil). These certifications provide a framework for organic production and, in some cases, agroecological production (Brazil). Such regulations differentiate certified organic production from uncertified agroecological production.

Instruments for the promotion of markets for organic or agroecological products encourage the establishment of local markets and short circuits/food chains: fairs, vegetable baskets, consumer cooperatives. In Latin America, they also consist of preferential public procurement programmes for family farming products with a premium price for organic or agroecological products, such as the Food Acquisition Programme (PAA) and the National School Feeding Programme (PNAE) for family farms in Brazil. While these programmes have been replicated by several countries in the region, they have suffered sharp cutbacks in Brazil under the Temer government (Schmitt *et al.*, 2017).

Fourth and finally, environmental regulation instruments and agri-environmental incentives, which also take the form of a variety of mechanisms. On the one hand, environmental regulations prohibit or regulate the use of certain phytosanitary products and GMOs (e.g. Decree-Law no. 153 of 1994 regulating plant health in Cuba, the Law on Biosafety of GMOs of 2005 in Mexico, etc.). Even though they do not focus on the promotion of organic agriculture or agroecology as such, and may face difficulties concerning effective enforcement, they are a key element in the adoption of agroecological and organic practices. On the other hand, regulations on land use prohibit farming or certain practices in certain areas, for example in water recharge zones (Costa Rican Soil Decree, etc.), forcing farmers to adopt more environment-friendly practices.

In addition to these regulatory instruments, positive and direct economic incentives have been put in place in the context of environmental, agri-environmental or climate change policies (Recognition of environmental benefits in Costa Rica, environmental law in Cuba, biodiversity protection in Mexico, etc.). Whereas these instruments are not necessarily targeted at peasant or family farming, they encourage the adoption of specific practices based on the principles of agroecology.

REVIEW AND PERSPECTIVE OF CURRENT POLICIES AND INSTRUMENTS

Although the last decade has witnessed the emergence of policies and instruments that favour agroecology, they remain fragile and few in number in comparison to mainstream policies that support large-scale conventional agricultural practices. Their implementation largely depends on the balance of power existing in each country between the proponents of the conventional model and those who support alternative forms of agriculture.

Progress and limitations

Our analysis of the policies that favour alternative forms of farming shows good progress. First of all, over the last decade there has been a progressive consolidation of networks of farmer groups, support organizations (NGOs, trade unions), researchers and public officials sensitive to environmental dynamics. Together they have been able to incorporate agri-environmental transition instruments into agricultural policy agendas and in specific or general policies. In fact, there is a growing recognition by a segment of public administration of actors of agroecology and organic agriculture, resulting in the opening up of spaces for institutionalized participation, consultation and negotiation

(Argentina, Brazil, Chile, Costa Rica, El Salvador, and Nicaragua). In addition, we note the incorporation of the principles of agroecology in policies concerning food security and sovereignty, as well as in those supporting family farming.

Nevertheless, the development of agroecology faces several limitations and difficulties. In most of the Latin American countries studied, agricultural policies are primarily oriented towards agribusinesses and exports, since they are aligned with the interests of large landowners and companies selling agricultural inputs. Furthermore, they are supported by officials of public agricultural departments that still embrace the Green Revolution paradigm. There is a vast power asymmetry between the movements and associations in favour of agroecology (and/or organic agriculture) and those favouring conventional agriculture, which often becomes an obstacle in the taking of environmental issues into account. Moreover, this imbalance is exacerbated in most of the Latin American countries studied because there is little coordination between movements advocating agroecology and those advocating organic agriculture. Tensions over the differing orientations of these movements hinder their ability to maintain or apply the policies they were able to shape through their joint struggles. Finally, the agroecology sector remains relatively unknown due to a lack of information and statistics on its farmers and markets.

In addition, although they exist in all the countries of the region, the policies and instruments that favour agroecology often lack visibility, and the responsibility for their implementation is shared amongst various public actors. Moreover, there are gaps in the research on agroecological practices or extension tools adapted to their characteristics (taking of local agroecological conditions into account, adapting innovations to the socio-economic contexts of farmers, their labour requirements, etc.). A paradigm shift in training agricultural technicians and civil servants of agricultural administrations (which is already taking place but with different intensities depending on the country) is necessary to remove this obstacle to the development of such research and support systems for producers.

Perspectives

Despite current limitations and difficulties, some elements support the agroecological transition in Latin America. In addition to the existence of policies and the creation of coalitions for the advocacy of agroecology, there is a demand in all countries for products of alternative systems (organic or agroecological) that are perceived to be healthier and less polluting. This demand reflects a willingness to pay a premium for such products if guarantees are offered through certification or through relationships of trust between farmers and consumers. Furthermore, this demand is seeing a structural growth based on a growing level of education, information and awareness among consumers on health and food quality. It constitutes an important potential driver for the development of agroecology. The second favourable element originates from the international context. Indeed, pressure from social movements and producer organizations in favour of agroecology can help forge alliances within the United Nations. FAO has, for example, mobilized government support, since 2015, in conferences hosted by 'agroecology-friendly' countries (Declaration of The International Forum for Agroecology, 2015).

CONCLUSION

An increasing number of specific public policies supporting agroecology and organic agriculture have been adopted in Latin America. Moreover, several instruments supporting agroecology are already included in various sectoral policies (food security, family farming, indigenous communities, biodiversity management, climate change, etc.). A historical review of these policies' trajectories highlights the importance of the crises at the origin of the emergence and dissemination of agroecology. It also highlights the role of coalitions of actors in favour of agroecology and organic agriculture through the convergence of social movements originating from family farming and those defending alternative production models for environmental and health reasons.

Despite this progress, agroecological transitions and policies supporting agroecology face several difficulties, including the focus on conventional agriculture in public policies and administrations, and the promotion of agri-export models, which reproduces an asymmetrical balance of power. Issues of access to land and technical advice, problems of implementation of and coordination between existing instruments, and the divergence between social movements promoting alternative production models also form serious barriers.

Nevertheless, perspectives that favour the agroecological transition are emerging based, on the one hand, on the growing recognition of agroecology as a viable alternative in terms of sustainability and resilience to the challenges that humanity and the planet will have to face and, on the other, on the growing demand from local markets for healthier food.

In this context, several recommendations could be made in order to strengthen the agroecological transition and the implementation of policies to support it in Latin America. As far as research is concerned, the benefits and limitations of the two existing approaches need to be analysed: specific policies oriented toward agroecology versus combinations of instruments within existing sectoral policies. In addition, it is important to fill the gap concerning the thorough analysis of the impacts of specific policies or combinations of existing instruments on agroecology dynamics in territories and at national scales. It is also important to gather data on different policies (in particular the allocation of budgets dedicated to the promotion of conventional agriculture versus alternative systems) as well as concerning the situation of agroecology (number of producers, level of production, of productivity, of income generated, labour force involved, etc.). In fact, no statistics or large-scale studies exist beyond the narratives of local agroecology experiments to assess the import of alternative farming systems in terms of production, economic results and environmental benefits.

Several avenues should be considered to strengthen existing policy frameworks and implement instruments conducive to the adoption of agroecology. In order to influence policy choices, actors in favour of agroecology and organic agriculture have to overcome their differences and, more importantly, create coalitions that transcend the agricultural sector by teaming up with consumers and urban populations who wield a growing influence on political choices. Furthermore, it is important to territorialize these public policies given the problems of segmentation and coordination in the implementation

of policies and instruments conducive to agroecology. Indeed, agroecology is embedded in particular territories and takes advantage of specific physical and human conditions. Transitions are difficult without the involvement of local actors.

Finally, the experiences analysed here can inspire policies for agroecology in Africa and Asia, and encourage a reframing of intervention strategies towards an agroecological transition. Indeed, looking beyond the technical aspects of agroecological practices, they show the importance of mechanisms for dialogue and participation involving governments and social movements that support alternative agricultural models which are more environment-friendly (sustainable agriculture, organic agriculture) and also take societal issues into account (as agroecology does in Latin America). These mechanisms can lead to the creation of coalitions of actors that are essential for influencing policymaking in favour of agroecology. They also advocate for agricultural extension and advisory systems that leverage local knowledge and territories. Finally, they highlight the importance of marketing and supply systems that impart value to their products, through certification by social monitoring, support for short circuits, public procurement instruments, and differentiated and guaranteed prices.

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