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## Research Article

# Public policy support for agroecology in Latin America: Lessons and perspectives<sup>1</sup>

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## Abstract

Latin American agroecology proposes a transformation of conventional agri-food systems. It is driven by social movements that have succeeded in forming coalitions that have promoted its integration into public policies. These policies involve a range of instruments that are often embedded in programs that also support organic agriculture and sustainable agriculture. However, while these two types of agriculture propose more ecological practices, they do not question the basis of the conventional agri-food system. The implementation of instruments to support agroecology therefore depends on the power relations established within each country. This paper analyses these policies and their influence on the development of agroecology in eight countries: Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Mexico, and Nicaragua. These policies remain fragile, while support for large-scale conventional agriculture is still predominant. Their challenge is therefore to convince more broadly farmers, consumers and policymakers about the importance of issues such as public health and food security.

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## Introduction

Latin America and the Caribbean are regions that are especially favourable to the emergence and development of alternative food and production models aimed at addressing environmental, social, economic and public health issues. Indeed, this region is especially threatened by the contradictions and excesses of conventional agriculture originating from the Green Revolution and implemented in the form of agro-industrial production models that often have little respect for the environment in a framework that is much less regulated than in Europe and North America. This conventional agriculture, intensive in its use of chemical inputs and water, produces pesticide-laden food that is harmful for public health [1-3]. Moreover, such systems are often set up on land that was forcibly grabbed from indigenous and rural people [4,5]. In a scenario of such exploitation, alternative farming and agri-

food models have been proposed by producers, researchers and social movements, and sometimes encouraged by public authorities in some countries.

Thus, with various actors in several countries calling for an agroecological transition [6,7], the promotion and support this transition obtains from public policies is an important issue. This paper proposes to examine and take stock of policies that favour the agroecological transition in Latin America and the Caribbean. It aims to understand how, and in what contexts, these policies have emerged, and proposes a critical appraisal of their contributions.

This paper is based on a study conducted in 2016 and 2017 by a group of researchers from the Public Policy and Rural Development in Latin America and the Caribbean network (PP-AL), which conducted case studies in eight countries in



Latin America and the Caribbean (Mexico, Cuba, El Salvador, Nicaragua, Costa Rica, Brazil, Argentina and Chile)<sup>2</sup>. These studies were conducted at national scales and were based on a common analysis grid involving five aspects:

- The favouring of environment-friendly farming models in policies;
- The trajectory of social movements and policies;
- The content of the policies;
- Their effects at the sectoral or territorial level;
- The main challenges and perspectives.

These case studies are based on bibliographic analyses (research literature and policy documents) and targeted interviews of resource persons and actors who are part of social movements and public administrations in the concerned countries.

### Concepts used and their integration into policies

The agroecological movement in Latin America proposes a radical transformation of agricultural and food systems to address environmental and social challenges [8]. It opposes a

conventional and primarily export-oriented model based on Green Revolution principles [9]. Agroecology was popularized largely due to the work of researchers such as Miguel Altieri and Stephen Gliessman, and was championed by coalitions of social organizations which enabled it to be included in public policy. The instruments in these policies are varied and often part of programmes that also support organic agriculture and sustainable agriculture.

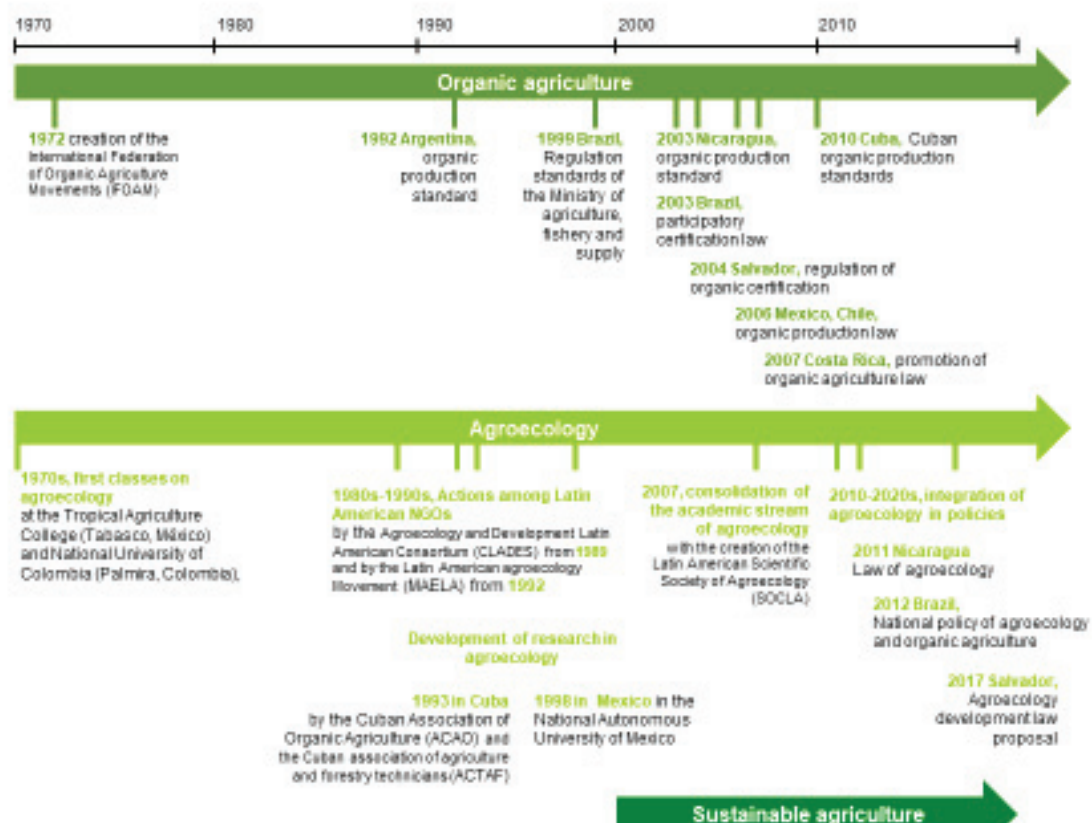
### Main conceptualizations of an environment-friendly agriculture

Various actors and public policies in Latin America and the Caribbean are pushing for a transition to 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 1).

#### Organic agriculture

Organic agriculture is the oldest of these models as it dates back to the 1920s [11]. 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 the health of people, and are based on ecological processes, maintenance of biodiversity, and the specificity of local conditions [12]. This agricultural model is today defined by national and

<sup>2</sup>These case studies and their summary are presented in Sabourin *et al.*, 2017.



**Figure 1:** The dynamics of the emergence and institutionalization of different environment-friendly agricultural concepts in Latin America and the Caribbean. Based on Altieri [10] and Sabourin [7].



international standards that are associated with certification processes. In Latin America, organic agriculture products are generally meant for the export market. Standards regulating organic agriculture prohibit the use of non-organic inputs (chemical fertilizers, synthetic phytosanitary products and genetically modified organisms). However, since it often allows the use of certified organic inputs, this production model is often associated with the idea of a substitution of chemical inputs by non-chemical ones, without calling into question the production model itself or globalized trade.

The institutionalization of organic agriculture began in the 1980s with the promulgation of regulatory standards promoted by the International Federation of Organic Agriculture Movements (IFOAM). Organic agriculture was incorporated into the public policies of countries in Latin America and the Caribbean starting in the 1990s with the creation of a normative regulatory framework: the 1992 organic agriculture regime in Argentina; the 1999 organic agriculture standard of the Ministry of Agriculture, Livestock, and Supply in Brazil; the 2003 organic production standard in Nicaragua; the 2004 organic certification scheme in El Salvador; the 2010 organic production standard in Cuba, etc. In addition to these normative frameworks, some countries also have specific policies for the promotion of 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, and is based on the idea that environmental challenges will have to be addressed for any meaningful transformation of the agri-food system. While, like organic agriculture, agroecology frowns on the use of non-organic inputs and espouses the importance of production systems based on principles that conserve ecosystems, it advocates, in addition, a greater autonomy for producers with respect to upstream and downstream markets and emphasizes the principle of recycling within cultivated ecosystems [13,14]. It thus proposes a profound modification of the agri-food system and of the relationship between farmers and consumers by advocating the establishment of short circuits (direct sales, local markets), and food security and sovereignty at the territorial scale. Thus, in addition to specifying aspects pertaining to the technical dimension of farming, agroecology proposes an integral vision that combines social, environmental, economic and cultural characteristics, defining a new model of sustainable rural development [15]. It is thus opposed to the mainly export-oriented business model based on principles of the Green Revolution [9].

The institutionalization of the concept of agroecology in Latin America did not translate into the emergence of specific standards in response to market demands. Its integration into the policies of the region's countries took three forms. In the emblematic case of Cuba, agroecology was initially a response to the crisis of conventional agriculture resulting from the US embargo and later from the dissolution of the Soviet Union, before it became a proactive system driven by a group of

researchers and academics, as well as by rural movements and urban agriculture. While the term 'agroecology' does not appear explicitly in existing policies, the underlying principles of Latin American agroecology are incorporated into the country's policies on food security and sovereignty, nutrition and health, and the agroecology concepts underlie a set of public policies, especially public programmes (programmes for organic pest control, urban and peri-urban agriculture, experimentation and technical assistance) [16]. In other countries, the institutionalization was reflected in the formation of national policies that were explicitly dedicated to promoting 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 the other countries of the region, such as in Mexico, and to a lesser extent in Argentina, Chile and Costa Rica, and is generally associated with the revitalization of smallholder agriculture and the conservation of indigenous traditions with the help of traditional practices such as crop associations (e.g. maize/bean called *milpa*) and social forms of production (mutual support, *tequio*, etc.) and living (*buen vivir*). Nevertheless, agroecology is not the subject of specific policies in countries in which the agro-industrial model continues to dominate.

## Sustainable agriculture

Sustainable agriculture (*agricultura sostenible*) emerged more recently, in the 1990s, in some countries in Latin America and the Caribbean. It proposes *ad hoc* adjustments to the conventional production system through the adoption of specific production 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 functioning of the agri-food or trading systems that farmers are part of. The concept of sustainable agriculture emerged from the heightened awareness of environmental issues following the Earth Summit in Rio de Janeiro in 1992 and of the dangers of the excessive use of chemical inputs in conventional agriculture. This concept was mainly mobilized in three of the countries studied (Costa Rica, Chile and Mexico) starting in the 2000s and resulted in policies promoting sustainable agriculture that acknowledged environmental services and the introduction of financial incentive instruments to encourage conventional farmers to adopt more environment-friendly practices.

## Analysis of the three concepts

While these three concepts, all of which propose a transition to a more environment-friendly agriculture, are present in all the Latin American and the Caribbean countries studied, albeit with different degrees of integration and institutionalization, it should be emphasized that they differ fundamentally in the way they incorporate environmental issues within production systems (modalities of 'greening') and in the types of farmers, food systems and market insertions they support (Table 1).

Nevertheless, in our analysis of policies supporting agroecology, we will include those that use, in varying degrees,



**Table 1:** Principal characteristics of the three agricultural models that incorporate the environmental dimension and which 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	Sought	Maximum
	Food system	Territorialized	Globalized	Globalized
	Labelling of products	Possible, but not necessarily sought	Yes, via certification, by third parties	No

any one of these three concepts, and which contribute to the agroecological transition to the extent they promote the adoption of 'agroecological practices', without necessarily accepting all the dimensions of the agroecological concept in Latin America.

### Processes for formulating policies that favour agroecology

Three main complementary processes, often opposing and/or in conflict, made it possible to set agendas and formulate policies favourable for agroecology.

#### Mobilization of social movements

The main process that enabled the setting of agendas and formulation of policies favourable to agroecology was 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 was decisive in formulating agroecology policies not only at the national level (Brazil and Nicaragua) but also at other levels (Chile, El Salvador).

Thus, in Brazil, the adoption of the National Policy for Agroecology and Organic Production in 2012 was the result of the influence of a broad 'pro-agroecology' network that was active during the two terms of former president Lula (2003–2010). This network was formed by the coming together of the family farming, agrarian reform, and agroecological movements (with scientists and NGOs also participating). This network benefited from the existence of participatory bodies consisting of government and civil society representatives, enabling dialogue between social movements, elected officials and academics, within entities such as the National Council for Sustainable Development and Family Farming, and the National Council for Food and Nutrition Security. Finally, the involvement of rural women was decisive in convincing President Dilma Rousseff right from her first term (2011–2014) [17].

In Nicaragua, the promulgation of the 2011 law to promote agroecological and organic agriculture was the outcome of ten years of struggle by a broad coalition of social movements and activist unions advocating for agroecology, organic agriculture and the defence of rural people, in association with academics

and civil servants, and with the support of international cooperation entities [18].

In Chile, an agroecology committee coordinated by the Agrarian Development Institute was created in response to the demands of agroecology movements formed by farmers' organizations [19].

In El Salvador, the policy for the promotion of agroecology presented to the government in 2017 resulted from the mobilization of a coalition of NGOs and other groups advocating for agroecology, in association with the Rural Dialogue Group and the National Committee for Family Farming [20].

### Response to a geopolitical, economic or environmental crisis

The second process that facilitated the emergence of policies favourable to the agroecological transition corresponds to the search for ways to respond 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 practices constitute a response to the geopolitical crisis of 1993.

In Argentina, the financial crisis of the late 1980s, which was characterized by hyperinflation, encouraged the adoption of policies to support poor people and those living in rural, peri-urban and urban areas, as also the implementation of the *Prohuerta* programme. Initiated in 1990, this programme, whose aim was to disseminate, through a participatory approach, the production of vegetables for self-consumption by facilitating access to seeds, water and markets (farmers' markets) for urban and peri-urban producers, was extended to rural areas following the 2000–2001 financial crisis [21].

Agroecology was adopted in Nicaragua, much like 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 acute 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 that completely cut off many regions of the country, preventing a large number of farmers from obtaining chemical inputs [18].

## 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 correspond mainly to government propositions for sustainable agriculture in response to social and international pressures on environmental standards, e.g. the Sustainable Rural Development Act of 2001 in Mexico and the Sustainable Agriculture Promotion Act of 2002 in Costa Rica.

These policies can also support organic agriculture or promote agroecological practices.

This is the case in Chile, with their integration into the technical assistance and investment subsidy programmes of the Agricultural Development Institute, and with the incorporation of an alternative certification system into the organic agriculture law. This alternative certification system allows small family farmers to market their organic products in various types of outlets [19].

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. It facilitated the establishment in 2013 by this ministry of a programme to recognize environmental benefits, which encouraged the adoption of agri-environmental and organic agriculture practices [22].

## 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 and Caribbean countries studied. Four national policy configurations to promote agroecology can be identified.

The first type of configuration corresponds to countries with existing regulations for organic agriculture, but without a specific policy for agroecology, and which, in the context of policies concerning the environment, the management of natural resources, biodiversity or food security, 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) which regulates the use of GMOs. 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 its law for the promotion of organic agriculture, Costa Rica has implemented agri-environmental measures as part of the programme to recognize environmental benefits.

The second type of configuration is found in countries which 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 case of El Salvador).

The third type of configuration corresponds to countries that have specific policies promoting both agroecology and organic agriculture: 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 and the Caribbean.

The first are instruments to manage innovations in agroecology and knowledge surrounding it. The aim of such cognitive instruments is to build the capacity of farmers 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 – that peasants can use to try out new techniques together and to 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 [19]. In Mexico, programmes such as the Sustainable Modernization of Traditional Agriculture (Masagro) have been launched and implemented since 2010 [23].

The second type of instruments are those meant to facilitate access to land and water. They are present in varying degrees of intensity in the different 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.

The third type of instruments concern the regulation and promotion of products and their market insertion. Present in most of the countries, they help promote organic agriculture and agroecology. They consist of two sub-types: first, regulations and standards, and, second, programmes for the marketing of 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 meeting the demands of international markets, a few 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 structure organic production and, in some cases, agroecological production (Brazil). Such regulations help differentiate certified organic production from uncertified agroecological production.

Instruments for supporting the marketing of organic or agroecological products promote the establishment of local markets and short circuits: fairs, vegetable baskets, consumer cooperatives. In Latin America, they also consist of preferential public procurement programmes for family farming products with a premium paid 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 [17].

In bold law that specifically and explicitly aims at agroecology in an integrated and cross cutting manner, in italic.

The fourth and final type of instrument are environmental regulation instruments and agri-environmental incentives, which 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, nor on 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.), which forces 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.). While these instruments are not always targeted at peasant or family farming, they nevertheless 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 seen the emergence of policies and instruments that favour agroecology, they remain fragile and few in number in the context of mainstream thinking that supports large-scale conventional agricultural practices. Their implementation depends to a large extent on the balance of power existing, in each country, between the proponents of a conventional model and those of alternative forms of agriculture.

### Progress and limitations

An analysis of the evolution of alternative forms of farming and policies that favour their extension shows some good progress. To begin with, there has been a marked and progressive consolidation over the last decade of a network of farmer groups, support organizations (NGOs, trade unions), academicians and public officials who are 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 section 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 sovereignty, food security and support for family farming. Additionally, the importance of agroecology is included in instruments helping face new challenges, such as those arising from climate change.

Nevertheless, the development of agroecology faces several limitations and difficulties. In most of the Latin American and Caribbean countries studied, agricultural policies are primarily oriented towards promoting agri-businesses and exports and are aligned with the interests of big landowners and companies selling agricultural inputs. Furthermore, they find support from officials of public agricultural departments who embrace Green Revolution paradigms. 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 consideration. Moreover, this imbalance is exacerbated in most of the Latin American and the Caribbean 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 lacunae of information and statistics on its farmers and markets.

In addition, although instruments in favour of agroecology exist in all the countries of the region (Table 2), the responsibility their implementation is divided between various public actors, leading to coordination issues. Moreover, there are still gaps in the research on agroecological practices or extension tools adapted to their characteristics (taking of local agroecological conditions into account, adaptability of innovations to the socio-economic contexts of farmers, labour requirements, etc.). A paradigm shift in the training of agricultural technicians and managers of services in agricultural administrations (more or less developed depending on the country) is necessary to remove this obstacle to the development of such research and support systems for producers.

### Lessons and perspectives

The analysis of the processes of emergence of policies and instruments favorable to agroecology in Latin America and the



**Table 2:** Typology of public policies supporting agroecological transition in studied countries.

Policies Countries	Knowledge & innovation	Access to Land and Water	Market access & regulation	Environmental regulation
Argentina	Pro Huertas, 1990 CIPAF (2005): research and extension in agroecology; INTA Agroecology Network (2013)		Organic production regime (1992) Pro Huertas, 1990 (family market)	Native Forest Environmental Protection Law
Brazil	National Policy for the Promotion of Organic Agroecology and Agriculture, 2012 Ecoforte	Pronaf agroecology Agrarian Reform Policy Water for all program	Organic Production Standard, 1999 Law on participatory certification, 2003 Public food purchase for family farmers programs (PAA & PNAE)	Decreto 98.897/1990 Reserva Extrativista PDA (1995-2014) Proambiente (2003-2011) Biodiversity & local seeds laws
Chile	INDAP Manos Campesinas	Territorial Rural Policy & Native Land Policy	Organic Production Act, 2006 Organic certification, peasant markets	Incentive for recuperation of degraded soils, 1995 Native forest law (2009) Sustainable Agric. Program
Costa Rica	Promotion of organic agriculture law Promotion of sustainable (PFAS)	Recognition of Environmental Benefits from agriculture and organic agriculture, 2013	Organic Agriculture Promotion Act, 2007 National Organic Agriculture Program, 1999 Organic agriculture law, participative organic certification promotion	Law on the Promotion of Sustainable Agriculture, 2003 Programme for the Soil Use, Management and Conservation Act, 1998 National Adapted Mitigation Measures (NAMAs) coffee and livestock
Cuba		Agrarian Reform; decree laws for the delivery of uncultivated lands in usufruct.	Cuban Organic Production Standard, 2010 Urban a suburban Agriculture Policy	Soil conservation LD, 1993, 2010 Environment Act, 1997, Biodiversity Objective (2016) Tarea Vida-cambi climático (2017)
El Salvador	Law proposal for national policy for organic and agro ecological products, 2017	Agrarian Reform	Organic product norm and standard Public Food Purchase program	
Mexico	Sustainable Modern Traditional Agric. Masagro	Ejido Reform water Envir services (PNAH)	Organic Products Act, 2006	Sustainable rural development law. 2001 Biodiversity Law and GMOs, 2005 General law of climate change,
Nicaragua	Network <i>Campesino a Campesino</i> Law for promoting Agroecology and organic agriculture No. 765 (2011) Technical norms for organic agriculture	Law of Communal Property Regime or Law No.445 (2003) Law of Agrarian Reform (1981) and its reform (1986) General Law on National Water or Law No.620 (2007)	Public Food Purchase for Family Farm Solidarity Economy Policy	General Law on the Environment and Natural resources (1996 & 2008) Law of Conservation, Promotion and Sustainable Development of the Forestry Special Law against environmental and Natural Resources crimes (2005)

Caribbean highlights three points. First, the institutionalization of agroecology occurs in synergy and in opposition to two other alternative concepts of non-conventional agricultural: organic agriculture and sustainable agriculture. While these three concepts offer different visions of alternative models of agriculture to conventional agriculture, the use of these concepts in the policy documents highlight a porosity. In the studied countries, some actors (social movements, elected officials, NGOs) have facilitated the processes of setting the agenda and then building policies in favor of explicit agro ecological instruments. Thus, specific and explicit national agroecological policies combine the promotion of agroecology and organic agriculture, for which the export promotion dimension is of interest to the export business and government sector [24]. The joint mobilization of these different concepts is an asset for putting agroecology on the policy agenda [25], promoted in Latin America as an alternative solution to the many problems of intensive conventional agriculture. In addition, the idea of agroecology has become a driving force for renewing or changing family farming, urban agriculture and food security policies [26,27]. However, these amalgamations between concepts also constitute a limitation for the institutionalization of the concept of agroecology

in all its dimensions. Indeed, while they make it possible to build alliances conducive to the emergence of programs that take advantage of the opportunity of policy windows [25], the differences in beliefs that underlie their respective causal coalitions [28] tend to reappear later, leading to demobilization that limits the effective implementation of policies dedicated to agroecology [17] or organic agriculture (Bonin et al, 2017).

Secondly, the processes of institutionalization of agroecology have been based mainly on demands and proposals from social movements often associated with those of family farming and/or organic agriculture, which have been echoed by progressive governments. These processes have been facilitated by events (climate, socio-economic, geopolitical) that highlighted the limitations of conventional agricultural models. Our analyses confirm that the strength of alliances in favor of agroecology has been to rely on actors from family agriculture and the movements for access to resources [29], contributing to a "politicization" of agroecology [30]. However, this politicization and assimilation of agroecology as a social movement [28,31] is also a weakness when governments and ruling parties change, as has been observed in family farming policies in Brazil [32,33] and Argentina [34].





With the enthusiasm for agroecology promoted by international organizations such as the FAO [35], more and more governments are positioning themselves and mobilizing in its favor [36]. This process can therefore contribute to the strengthening of local initiatives through increased dissemination efforts through policy transfer processes, such as territorial development and family agriculture policies in the region. In addition, the increasing involvement of this international sphere can change the balance of power at the country level between social movements and governments. But this process is also accompanied by a recovery and differential interpretation of the concept of agroecology [36], which can be a source of new tensions between social movements and institutions [37].

Despite current limitations and difficulties, there are some elements that support the agroecological transition in Latin America and the Caribbean. In addition to the existence of policies and the creation, albeit as yet tenuous, of coalitions for the advocacy of agroecology, there is a demand in all the countries for products of alternative systems (organic or agroecological) that are perceived to be healthier and less polluting. This demand translates into a willingness to pay a premium for such products if guarantees are offered through certification or through relationships of trust built between farmers and consumers. Furthermore, this demand is seeing a structural growth on the basis of a growing level of education, information and awareness among populations 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, [38]). While a momentum is increasing in international arena and international organisation of cooperation worldwide to promote agroecology as a solution for the food system challenges. It has become also a territory of dispute among international cooperation and social movement [36,37]. Some recent changes in politics has also jeopardize the agroecology policy advances in some Latina American countries, such as the dismantlement of rural and environmental policies in Brazil [39-46].

## Conclusions

A growing number of specific public policies supporting agroecology and organic agriculture are being adopted in countries in Latin America and the Caribbean since 2010s. Often, a number of 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: the focus on conventional agriculture in public policies and administrations and the promotion of agri-export models resulting from an asymmetrical balance of power between the proponents of these models; issues of access to land and technical advice; problems of implementation of and coordination between existing instruments; the divergence between social movements promoting alternative production models, etc.

Nevertheless, perspectives that favour the agroecological transition are opening up based, on the one hand, on the growing recognition of agroecology as a viable form of a possible 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 products from alternative production models.

In this context, several recommendations can be made to strengthen the agroecological transition and the implementation of policies to support it in Latin America and the Caribbean. As far as research is concerned, the benefits and limitations of the two existing approaches need to be analysed: specific policies versus combinations of instruments within existing sectoral policies. In addition, it is important to fill the lacunae in the analysis of the impacts of specific policies or combinations of existing instruments, as well as to gather data on different policies (in particular the allocation of budgets dedicated to the promotion of different types of conventional agriculture versus for its alternative forms) and the agroecological situation (number of producers, level of production, of productivity, of income, etc.). In fact, no statistics or studies exist at national levels 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 can be considered to strengthen existing policy frameworks and implement instruments conducive to the adoption of agroecology. In order to be able to influence decisions politically, actors in favour of agroecology and organic agriculture have to forgo 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 integrates into particular territories and takes advantage of specific physical and human conditions. Transitions are difficult to effect without the involvement of local authorities and local actors through the implementation of suitable policies.

Finally, the experiences of countries in Latin America and the Caribbean can inspire projects for developing agroecology in



Africa and Asia, and encourage a reorganization of intervention strategies towards an agroecological transition. 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 which take societal issues better into account (agroecology 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 call 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, and public procurement of agroecological products at differentiated and guaranteed prices.

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