



What economic democracy for degrowth? Some comments on the contribution of socialist models and Cuban agroecology

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ARTICLE INFO

Article history:

Available online 30 March 2012

ABSTRACT

While degrowth is about reducing energy and material flows in the economy while sustaining basic human needs, capitalism fosters the opposite trend. How then is degrowth to be implemented on a large scale? In line with different critical intellectual traditions, we argue that degrowth is unlikely to occur within an economy based on capital accumulation and free market of assets. Our objective is then to preliminarily investigate the links between economic structures, democratic principles, and degrowth. We do this, firstly, by briefly exploring some of the main theoretical models of economic democracy in order to find out their potential for achieving sustainable degrowth. In our view, models of self-managed socialism have the best potential for this. Secondly, we intend to learn some empirical lessons from a countrywide experience: Cuban agroecology, today's largest real-life experience of agroecological "degrowth". Our hypothesis is that the Cuban economy, which limits the private accumulation of capital and of productive assets, is in a better position for achieving forms of sustainable degrowth than capitalist economies, but that it would be even more so with more democracy. The Cuban agricultural system faces the challenge to free itself from the central planning tradition. This could be achieved by following the current process of giving increasing autonomy to small producers. Specifically, we argue that small-scale farmer cooperatives have the best potential for achieving the degrowth-oriented goals of agroecology.

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1. Introduction

Sustainable degrowth has been defined as "an equitable and democratic transition to a smaller economy with less production and consumption" [1]. It is about reducing the energy and material flows while still fulfilling basic and growing human needs such as food, health, education and housing [2,3]. However, it turns out that capitalist institutions foster exactly the opposite trend. How then is degrowth going to be implemented on a large scale? Is it reasonable to think that today's liberal democracies, associated with changes in public opinion, will suffice?

For a long time, socialist scholars have argued that the kind of politics and ideology that prevails in a given society is closely related to the economic structure it displays [4,5]. More specifically, many of them are sceptical about the possibility to combine a true democracy with capitalism – the latter being fundamentally characterized by a lack of democracy in the firm. This is reflected, it is argued, in the fact that the political and economic life tends to be shaped according to the interests of a small group of people owning (or managing) the strategic means of production [6]. Indeed, this elite can use its

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disproportionate economic power to influence political processes through (dis)information campaigns, the funding of political parties, of candidates or of those organisations that produce and diffuse a certain kind of knowledge considered appropriate [7]. Alternatively, this dominant class can also threaten to plunge the country into a crisis if a government refuses to satisfy its interests (it can do so by delocalising production, investing abroad, and so on). A given government is thus to some extent forced to please the economic elite in order to stay in power.

Dahl and Lindblom [8] classically distinguished between “democracy” and “polyarchy”. Polyarchy represents today’s dominant representative system: in such system, the electorate is not fully sovereign as it is a series of specialized elites – not a single, monolithic elite as in autocracy – that compete and bargain with one another for the control of government and society, through elections. Democracy, on the contrary, is a system in which the electorate is truly sovereign, meaning that: (1) its members are reasonably well informed about the issues to be decided by the political process, and reasonably active in contributing to their resolution; and (2) there exists no stable minority elite with more political power than any other stable group, especially than the elected officials. Democracy in this sense can hardly coexist with capitalism, a system fundamentally characterized by class stratification.

Going back to the issue of a sustainable degrowth transition, we believe that such transitions can only be endorsed by citizens reasonably well informed about the socio-ecological issues at stake and reasonably active in contributing to their resolution, that is, by citizen unobstructed by a privileged class. This means, again, that degrowth appears to be hardly possible within today’s capitalism and associated liberal democracies. In line with this, many degrowth supporters seem more keen on models of participative and direct democracy [3] – but they remain rather unclear as to which specific idea of democracy can be combined to an economic structure fostering degrowth. Martínez-Alier et al. [1] have argued that future research on degrowth should crucially focus on understanding the conditions for reaching a reduction in the size of the economy. Indeed, research on these conditions must be theoretical as well as empirical and must focus on contemporary as well as historical experiences.

In the present paper, our objective is precisely to investigate the links between the economic structure, democratic principles, and degrowth. We shall do this by preliminarily exploring some theoretical issues as well as a countrywide experience. Firstly, we provide a discussion of some of the main models of alternative politico-economic systems in order to find out their potential for achieving economic democracy and degrowth. We believe that degrowth supporters would gain from discussing such theoretical models. They include participatory planning, market socialism, and models based on workers’ self-management. We argue that the latter has the greatest chance of succeeding a degrowth transition. Secondly, we intend to learn some empirical lessons from Cuba’s agriculture – today’s largest real-life experience of agroecological “degrowth”. In so doing, we keep a critical eye on the combination of participation, economic organization, and sustainable “degrowth”. Our hypothesis is that a largely non-capitalist system such as the Cuban economy – despite its many shortcomings – is in a better position to achieve forms of sustainable degrowth than capitalist countries, but that it would be even more so with more democracy. Specifically, we argue that small-scale farmer cooperatives have the best potential for achieving the degrowth-oriented goals of agroecology.

2. Degrowth, democracy and theoretical models of socialism

Today, past the classical socialist calculation debate, the theoretical discussions on alternative politico-economic systems are not so much anymore between the supporters of the market versus those of planning, but between the different ways of articulating market, community and political regulations [9]. Three main families of theoretical models oppose each other in today’s debates: (1) those of “participatory planning”, whose supporters continue to deny any important role to markets, (2) those of “market socialism”, and (3) those of “workers’ self-management”. We shall briefly discuss them and examine which one seems to be best suited for encouraging a sustainable degrowth transition.

The supporters of “participatory planning”, faithful to the Marxist tradition, criticize the market on the basis of its inherent “fetishism of fictitious commodities” (such as land and labour) and because of the competition it promotes, which atomizes citizens and destroys solidarities. Mandel [10], Devine [11] and Albert and Hahnel [12] describe with a lot of details systems of participatory planning based on complex architectures of boards of self-managed firms and of local committees, through which producers and consumers would confront their views and priorities. These local units would elect representatives in a vast network of intermediary bodies at different scales (sector-based, regional, national) with the aim of determining the main macroeconomic orientations. The created wealth would then be redistributed in free basic goods and services, while exchange coupons would be used for the rest. Such models aim at developing the largest possible democracy, in both the political and economic spheres, while satisfying basic needs at least as effectively – if not better because in a more egalitarian way – as the capitalist market.

Supporters of the market criticise the model arguing that no democratic debates can effectively deal with the mass of information involved in the numerous daily economic decisions taken at all the different levels of society. To this, the promoters of “participatory planning” retort that personal computers and Internet may provide an extraordinary possibility for developing and networking direct democracy [13]. What is more, these kinds of models – because of their emphasis on the circulation of information and their close connexion to local realities – have a great institutional potential for actualizing voluntary simplicity and forms of degrowth. Nonetheless, such models come up against a fundamental objection: without assuming the emergence of altruistic “new” human beings, it is hard to see, in the absence of market incentives, what would drive producers to freely and fully cooperate and to use efficiently the resources and capital of their enterprises [9]. This is

why a majority of authors admit the necessity of markets. But a crucial point divides them: is wage labour to be maintained, or suppressed in favour of workers' self-management? And what are the implications for degrowth anyway?

Market socialism is a competitive economy where workers own the means of production. Its supporters start from the following basic idea: markets are a great tool for producing and processing information and for allocating resources, but capitalism generates so much inequality, lack of democracy and socio-environmental destruction that wastes are simply enormous [14]. Capitalists must use considerable resources only for controlling and disciplining labour [15]. For Roemer [14], the fact that the benefits of growth are concentrated in the hands of a minority drives the latter to neglect most "public bads" (pollution, poverty, criminality, etc.). These adverse outcomes are not a problem for the elite as long as it is able to protect itself against them through high incomes, for instance by living in secured areas and so on. According to Roemer, an asset-based egalitarianism would stimulate workers and avoid many of capitalism's inefficiencies. It would also promote a better social balance between economic growth and public bads. Such models go much beyond the development of employee shareholding and imply a radical decentralization of stock assets, one of today's most concentrated forms of property.

Criticism of the market socialist models often focuses on their attempt to establish the "perfect competition" found in neoclassical textbooks. Indeed, they mobilize the standard – and questionable – neoclassical tools and assumptions. Roemer's model [14] for instance is based on a sophisticated institutional system maximizing profits through market competition while preventing any re-concentration of capital in the hands of the most skilful after a few decades. But as Coutrot [9] puts it, "the models of market socialism are all liable to Einstein's (and Marx's) critique of capitalism: by maintaining wage labour and generalized competition, they keep on fostering individualism and undermining social solidarity" as well as community [16]. What is more, by mimicking capitalist growth, these models are also liable to the degrowth critique. They embody the environmental blindness that can still be found in the work of many Marxian scholars. The great advantage of the workers' self-management models is rooted in their democratic nature: democracy is not only present in the political sphere, but also within the firm as we shall see next.

In a self-managed economy of the type designed by Schweickart [17], associated workers control the firms: they freely decide, through democratic elections, who will run it and they discuss the organization and projects of their enterprise. Yet they are not the proprietors of the firm which continues to belong to the community. Thus there would be no market in property titles: nobody would be allowed to buy, sell or own a business where other persons are working.¹ This model would therefore present no wage labour, synonymous with domination. As Marx [18] argued, workers employed against a salary cannot control their labour nor the product of their labour; they must submit themselves to a hierarchy on which they have no influence. In a self-managed enterprise, by contrast, it is the workers themselves who hire capital: in Schweickart's model, they would pay fixed interest to credit organizations for loans used as capital and would buy the equipments and raw materials necessary for maintaining productive capacities and selling on the market. Incomes would primarily serve to reimburse loans and pay taxes while the balance would constitute the workers' remuneration, allocated according to a salary scale democratically established. Moreover, Schweickart's model includes an original "social control of investment" that articulates as following: self-managed firms are taxed in order to supply an investment fund democratically controlled and hierarchically distributed among different levels (national, regional, communal, public banks). These funds would finance the investments of the workers' cooperatives and public services, at the appropriate geographical level, according to a set of criteria based on use value, profitability, social justice and environmental conditions.

Self-managed economic models do not assume a radical change in human nature. Some of the key elements of a market economy are maintained – the consumers' choice, competition between producers, and their motivation through the remuneration of their efforts. These characteristics are said to foster efficiency and innovations. However, the difference with capitalism is double: interdiction of self-financing and private appropriation of capital; and interdiction to hire labour. In this way, nobody can privatively accumulate economic power. In addition, unlike market socialism models, systems based on workers' self-management may generate new dynamics surpassing purely egoistic behaviours: egalitarianism and a feeling of community are embodied in their institutions, just as inequality and individualism are etched in the institutions of capitalism. Moreover, the socialisation of investment implies that citizens can democratically decide what to do with economic growth.

To sum up, models of self-managed socialism allow a realistic synthesis between economic democracy and the potential for a large-scale degrowth transition. Indeed, a reduction in the size of the economy, in material and energy consumption, seems much more likely in a society where: (1) a sense of community is stronger, meaning that there can be no privileged class having the power to push for personal enrichment to the detriment of the society and its environment; (2) investment is socialized, meaning that social and environmental costs are drastically reduced and therefore that damaging industries are limited; and (3) information can circulate much more freely than in capitalism, meaning two things. Firstly, there would be no aggressive advertising campaigns pushing people to consume more, that is, to project immaterial needs into material goods and therefore to satisfy illusions rather than needs. Quite the opposite, outside such a mass consumption society, people could get closer to some of their true needs, many of them being immaterial [19]. Secondly, through the general involvement of workers and citizens, unobstructed by a dominant class, the society as whole would be much more reactive to the state of its natural resources because it would be closely connected to them. A degrowth-oriented path could hence be

¹ However, according to this model small family business such as a bakery, a shoe repairer or a café could remain privately owned.

a very real option. Schweickart [17] himself wrote that “economic growth is not the answer” and carefully distinguished between quantitative and qualitative indicators of “development”.

Next, we shall turn to a real-life experience, examining Cuba’s transition towards agroecological systems for food production. While the Cuban economy can be described as centrally planned and lacking workers’ self-management, this does not mean that there is no workers’ cooperative. We argue that this latter sector has the best potential to further develop agroecological methods of food production and other forms of sustainable degrowth.

3. The Cuban experience with agroecology

Before 1989, Cuba had the most industrialized agricultural sector among Latin American countries [20,21] and had reached the developed world standards in life expectancy, education and social development indexes. After the collapse of the Soviet Union and the tightening of the U.S. embargo, Cuba suffered from an acute economic crisis which particularly affected the agricultural sector. Drastic reductions of imports of food, agrochemicals and industrial equipment forced the Cubans to switch to a low external input form of agriculture and to boost domestic production of foodstuffs. Principles of organic or semi-organic agriculture were implemented on a large scale, representing an unprecedented experience of this kind at the scale of a whole country [20]. Taking into account that high education and health standards were maintained [22] while drastically reducing the ecological footprint, the Cuban shift to agroecological low-input agriculture can be interpreted as a real-life experience of degrowth.

3.1. *Brief historical account and general situation of the Cuban agriculture*

Before 1959, Cuban agricultural production was strongly centred on export monoculture specialized in sugar production. Though the revolutionary government carried out two agrarian reforms aimed at agriculture diversification, reducing economic dependency from sugar export, and lowering the burden of importations [23], the secure and stable sugar market provided by the Soviet Union motivated the Cuban government to continue with the country’s dependency on external trade. In 1989, about 2 million hectares of arable land were dedicated to sugarcane, while Cuban production represented 7.4% of the world’s sugar market [24].

The Cuban revolution brought radical changes in land tenure and forms of agricultural exploitation: before 1959, 9.4% of the landholders owned 73.3% of the land; through the Agrarian Reform Laws of 1959 and 1963, land was distributed to 200,000 peasant families, while 70% of the land was passed over to state control [24,25]. In the 1970s, about 80% of the arable land was exploited by big state farms under the industrial model of high-input, conventional agriculture: each year, 1,300,000 tons of chemical fertilizers and 1,400,000 tons of animal feed concentrates were used. Eighty million dollars were spent each year to purchase pesticides. The number of tractors was increased to 90,000 (one each 50 ha) and irrigated lands reached some 14% of the total. As a consequence, productivity of labour increased three times, and the number of oxen used for field labour decreased to marginal levels [25].

During the same period, about 12% of the arable land remained in the hands of small owners, who were grouped under the roof of the “National Small Farmers Association” (ANAP, *Asociación Nacional de Agricultores Pequeños*), created in 1961. Simultaneously, the “Credit and Services Cooperatives” (CCS, *Cooperativas de Créditos y Servicios*) were created to support small farmers with credit and technology transfer. Small farmers remained individual owners of their land with up to 67 hectares. The land above this limit had been redistributed by the Agrarian Reform of 1963 [26]. After 1975, as a way towards agriculture socialization and in order to avoid land fragmentation, small farmers were strongly encouraged by the state to voluntarily group their land and their means of production. They formed “Cooperatives of Agricultural Production” (CPA, *Cooperativas de Producción Agropecuaria*) and became collective owners [27]. From the 1970s up to now, both CCSs and CPAs co-existed and preserved the traditional use of land with mixed farming, animal traction and fewer inputs than state farms [25], although during the 1980s the CPAs looked more like state enterprises than cooperatives.

The productivity of the conventional agricultural model began to decline after 1980, with the reduction in soil fertility including salinization, erosion and compactation [24]. Moreover, industrial agriculture had provoked a massive rural exodus [25], and the terms of trade with the Soviet bloc also began to decline, with an increased national debt, shortages, and the development of black markets as consequences [28]. After the collapse of the so-called socialist regimes in Europe, the Cuban government introduced a kind of rationalized “war economy”, called the “special period in peace time”. Between 1989 and 1993, total imports including foodstuffs, spare parts, industrial equipment and agrochemicals were reduced by 75%; fuel importation was reduced to a third, fertilizers to 25%, pesticides to 40%, and animal feed concentrates to 30%, seriously affecting the agricultural sector [25]. The GDP fell from 19.3 to 10.0 billion dollars. Many industrial complexes closed, public transportation and electricity consumption were reduced to a minimum, which affected living conditions of the population. The Cuban agriculture was suddenly confronted with the challenge of increasing food production and maintaining export production using 50% less inputs.

To face the crisis, measures were taken at technical, institutional and economic levels. At the technical level, Cuba mobilized its well-developed competences in agronomy research, including young Cuban researchers influenced by the Green movement who were already interested in alternative production methods since the 1980s [29]. Technical innovations included the production of biological pest controls and biofertilizers [25], the promotion of the use of renewable energy like biogas [30], and the development of livestock production based on protein-rich legumes and their integration in

agroforestry systems. Moreover, traditional techniques were rediscovered and further developed, including the use of animal traction, crop rotation, genetic diversification, and the conversion of specialized farms to mixed farming [31].

At the institutional level, the most important measure was the creation of “Basic Unities of Agricultural Production” (UBPC, *Unidades Básicas de Producción Cooperativa*) in 1993. The UBPCs are cooperatives aimed at assigning land in usufruct and selling production means to the people working on former state farms [27]. In a UBPC, the land owner is still the state, but the members of the cooperative are now the owners of the production. Furthermore, the size of state farms was reduced about tenfold on average in order to form UBPCs. In this way, the latter approximately reached the size of CPAs [27]. Currently, the UBPCs represent the most important type of exploitation in the country, with the largest number of people involved [32] on 40% of all cultivated lands [33]. Urban agriculture and gardening at the family and community levels were also encouraged. In addition, because organic agriculture demands more workforce than industrial agriculture, the government is encouraging a kind of “urban exodus”, promoting a return to the countryside with better housings and land distribution in usufruct. The release of the Decree-Law 259 gave land usufruct rights to about 100,000 new farmers on small- and middle-scale farms up to 13.4 ha covering already more than 1 million hectares.

Finally, the main economic measure taken consisted in re-opening in 1994 “farmers’ markets” working under conditions of supply and demand. Following this, farmers can sell their products either to the state or to the farmers’ market. They can sell there any products that are not under state contract, and they can also sell products that exceed the amounts fixed by state contracts [34]. At the beginning, the prices on the farmers’ market used to be significantly higher than those defined by the state, thereby giving farmers strong incentives to produce surpluses. At the same time, many inputs are only available through state contracts, thus encouraging producers to contribute to the state food distribution system as well. Moreover, the government has now significantly raised state market prices for milk, meat, grains and cereals.

Despite these efforts, the agricultural sector is still one of Cuba’s greatest challenges: the country is not self-sufficient yet in terms of food supplies and has to import more than USD 1.5 billion per year of food. What is more, about 50% of the agricultural land is not used [26] and since 2004 the agricultural production has stagnated or even declined [22]. In short, achieving the challenge of sustainable degrowth in Cuba would not only mean reducing food imports, but also boost domestic production while respecting agroecological principles and standards of equity. Because many of the structures are still not adapted and conventional ways of thinking still persist among some influential policy makers, restructuring the foundations of the Cuban agricultural system towards an agroecological, decentralized and diversified system will take some time.

3.2. Cuban types of agricultural exploitations and their characteristics

The socio-political transformation process of the Cuban agriculture described above led to the contemporary co-existence of state farms, UBPCs, CPAs, CCSs, urban gardens and “new peasants”. All these types of agricultural exploitations are legally and socially well defined and share specific characteristics throughout the whole country. On the one hand, each type of exploitation has a specific degree of autonomy in their decision-making structure and in access to markets. On the other hand, they show different performances in productivity, efficiency, use of inputs and adoption of agroecological practices, thus showing heterogeneity in their application and different potential for sustainable degrowth. These differences are described in the present chapter, focusing on state farms, UBPCs, CPAs and CCSs.

3.2.1. Degree of autonomy in decision-making

Popular participation, although one of the foundational principles of the Cuban revolution [35], has experienced a dynamic renewal in the last ten years [36]. In the agricultural sector, the degree of autonomy in decision-making is closely related to the types of agricultural exploitations and their historical background.

Firstly, the CCS is the less socialized form of cooperative [27]. Farmers are private owners of land and work their farms independently, including in the choice of crops and livestock production, with the exception of products considered “strategic”. In the whole country, only the state can sell or buy land [37] and any transfer of individual rights derived from land property is forbidden [34]. This means that the law protects farmers from losing their lands through debt and punishes speculation on land value. Furthermore, as a result of the agrarian reforms, no private individual can own more than 67 hectares of land. CCS members may possess individual means of production or share them collectively within so-called “strengthened” CCSs. Secondly, CPA members own collectively their land and, like in CCSs, freely choose to engage in specific crop and livestock production and in purchasing inputs and services. The social organization of CPAs and CCSs is fixed by general regulations, defining duties and powers of an elected president, board of directors, as well as the rights and responsibilities of the cooperative members [34]. Thirdly, although they are now owners of their production and means, the UBPCs have less decision autonomy than the CPAs and CCSs. They maintain commercial relationships with the distribution chain of the original state enterprise from which they emerged, and they negotiate prices and production plans based on a quota system [32]. Therefore, the planning of production is mainly defined by the state enterprise that provides inputs and buys products [38], leaving very little autonomy in productive and purchase choices. Finally, state farms – most of them belonging to the military forces – follow the traditional planned production. Besides this, “New Type State Farms”, a kind of mixed form between state farms and UBPCs, were also created [32]. Table 1 summarizes the characteristics of these different agricultural exploitation types.

Table 1
Comparison of the main categories of Cuban farms.

	State farms	UBPC	CPA	CCS
Land tenure	State	State (land in usufruct)	Collective	Individual (sometimes also state land in usufruct)
Ownership of production and production means	State	Collective	Collective	Individual, some equipment is collective
Choice of crop and livestock production	State	State	Collective	Individual
Choice of purchasing inputs and services	State	State	Collective	Individual
Main markets accessed	State and farmers' market	State market	State market	Farmers' market, state market

Source: Adapted from Jaffé and Zeller [26].

3.2.2. Performance and agroecological practices

Because national statistics usually differentiate only the state (state farms) and the non-state sector (UBPC, CPA, CCS and others), no comparative data about the productivity, the use of inputs and the implementation of agroecological practices of the different types of farms could be found. Some observations made by different studies can nevertheless give an idea about the productive and agroecological performance of these different types of farms. The fact that during the crisis, CPAs and CCSs maintained high levels of productivity, contrary to state farms, was the main driver to motivate the creation of UBPCs [27]. It is generally recognized that the small farmer sector, represented by the CCSs and CPAs are more productive than the UBPCs and state farms, and use more ecologically sound practices [39]. Though it slightly improved in the last years [21], the productivity of UBPCs has not met the expectations. Moreover, they have experienced management problems and their workforce has diminished [27]. The fact that the UBPCs are not autonomous in choosing what they produce and where they market it has been identified as a major cause of these problems [27]. This is especially the case of the cattle-rising UBPCs, which are bound to market their production exclusively through the centralized state distribution system, and of which only 21% were considered rentable in 2005 [26].

Early conversion to organic and low-input agriculture has been mainly documented for CCSs and CPAs, and was strongly supported by the fact that most farmers could rely on their traditional knowledge [40,41]. This is especially the case in the conversion from specialized dairy farming systems into mixed farming systems, where the UBPCs and state farms still lag behind [21]. However, areas within UBPCs dedicated to self-consumption and UBPCs dedicated to other crops than dairy production have implemented agroecological practices [42]. The UBPCs have also widely contributed to root people in the land and this form of organization is progressively looking more like CCSs. Yet, the best performance in combined indicators of diversity, productivity and efficiency is currently reached by small farmers belonging to CCSs, but there is an important variation within this sector [43].

An important characteristic of the CCSs is that in 1996 they provided more than 70% of the food sold at the farmers' market, thus being strongly involved in direct selling to the population [32,39]. Meanwhile, the CPAs and UBPCs together accounted for less than 4% of this provision, thus marketing the bulk of their production to the state distribution system. Because UBPCs are bound to fulfill contracts with the state that provides them with inputs, they have little incentives to change practices. On the contrary, CCS members are strongly encouraged to implement agroecological practices and free themselves from the input dependency because this gives them the option to sell their product to the farmers' market [37].

Finally, the UBPCs are characterized by bearing large amounts of uncultivated land, mainly because of a lack of workforce. On the contrary, CCS members have increased as their income is much higher than in UBPCs. While UBPCs and state farms have the tendency of underusing their resources, CCS members might also overuse them, especially in the case of cattle rising [26], showing that the economic downturn after the special period was not fully free from environmental damage [44].

4. Discussion: does autonomy in decision-making foster “degrowth”?

While the different types of Cuban farms coexist within a unique system, they have specific legal and economic characteristics that show some similarities with the theoretical models of production described above. The UBPCs and state farms share some characteristics of the “participatory planning” models. Planning theoretically involves not only the producers but also the consumers that are represented by the state, which has the function of redistributing production to the population. In this sense, the UBPCs are bound to produce goods considered of “social importance” by the state rather than goods privately preferred [26]. The UBPCs and state farms are confronted to the critique mentioned before, namely that the state chain of distribution cannot adequately deal with the amount of information involved in the numerous economic decisions to be taken. On the other hand, distribution actors have no incentive to cooperate and efficiently use the resource they deal with. Given these conditions, productivity remains low, resources are underused and there is little incentive to implement more ecological practices.

CCS members, on the contrary, are free to sell their products through the farmers' market. They own the means of production and may compete to access the market. They may hire labour at a small scale. The presence of a market fosters productivity and innovations (including the development of agroecological practices) but it does not mean that CCSs are

capitalist. Because there is neither a free land market nor a free market of inputs and services, CCS members cannot trade their production means nor accumulate capital. In this sense, CCSs share some characteristics of “market socialism”, in which there is market competition, including wage labour, but an impediment of any re-concentration of capital. However, the CCSs differ from standard models of market socialism because they are linked to cooperatives and also because they are not free to buy inputs, especially agrochemicals, which are controlled by the state and have their importation burdened by the U.S. embargo. The fact that market socialist systems are liable to the degrowth critique, as stated above, might be observable in the cases of resource overuse in private cattle ranches cited by Jaffé and Zeller [26].

For their part, CPAs are also free to choose what they produce and where they market their products, but they cannot hire labour since all members are part of the cooperative. Similarly, investments are controlled by the cooperative’s members. These characteristics make CPAs nearer to the self-managed socialism model. The difference is that many CPAs still maintain privileged relationships with the state, thus sharing some characteristics with the UBPCs. However, the CPAs have had sufficient autonomy to successfully implement and develop agroecological practices. Their relative weakness may rather lie in the fact that they are losing workforce in favour of the CCS, because the latter’s workers have higher incomes. This might be an indicator of increasing inequalities in the country, which should be further studied.

These preliminary considerations tend to show that autonomy and local decision power is an important driver of a sustainable degrowth transition, when certain conditions at higher levels are met. In the Cuban case, these conditions include state control, limited availability of chemical inputs, and the absence of a land market, which prevents accumulation of capital [30].

5. Conclusion

Cuba faces the challenging task of going beyond productivist developmentalism inherited both from the Soviet bloc and from the capitalist West [29]. The country now widely recognizes that the conventional agricultural model leads to an increased dependency on imports, a weak food security, an increased vulnerability against world market trends, growing indebtedness and severe environmental degradations [21,45]. In this context, the Cuban experience with agroecology is a promising and unique example of “degrowth” as no such transition could be observed anywhere else on a large scale. A relatively egalitarian society (from an economic viewpoint) combined with strong public policies and the absence of landlord and agribusiness interests undoubtedly represent a key advantage in achieving such a transition. However, the centralized Soviet-type heritage has promoted industrial farms to the detriment of smaller-sized self-managed farms (especially UBPCs) more inclined to adopt a degrowth-oriented path. Because state farms – the favorite model – were managed by administrators applying large-scale receipts of chemical use in export monoculture, the system has separated managers and producers, neglected traditional knowledge, and prevented agricultural production adapted to local natural conditions [20,29]. Smaller production units and more democratic management are clearly the keys to pursue sustainable degrowth in this context. Although the Cuban government ascribes to this option, there is yet a long way to overcome resistance to change after many years of centrally-planned productivism.

This empirical example suggests that theoretical models of self-managed socialism have the kind of realistic economic democracy that is best suited for a large-scale degrowth transition. Indeed, a voluntary reduction in material and energy consumption is only possible in an economic democracy that makes people responsible, as a community, for the environmental consequences of their own production and consumption pattern. People are directly responsible because, in Schweickart’s model, investment is socialized, workers have to manage their own enterprise, and there is no privileged class manipulating votes according to vested interest. Outside the pressure of a mass consumption society, people can get closer to some of their true needs, the most important of them being fundamentally immaterial. In such economic democracy, people would have no choice but stay connected to the state of their natural resources. Combined together, these different elements open the way for a very real degrowth-oriented path. In this sense, we argue that a non-capitalist system provides a greater potential for achieving sustainable degrowth than a capitalist system.

The Cuban experience certainly provides some important lessons along these lines but many questions, experiences and debates will be necessary to build a new mobilizing eco-socialist model being at the same time efficient, democratic and sustainable. The strengths and weaknesses of the Cuban experience show nevertheless that alternatives do exist and that people are not bound to repeat the same errors of centrally-planned productivism, capital concentration, work alienation or the elusive quest for infinite growth. According to Martínez-Alier et al. [1], “for sustainable degrowth to be successful one important step would be to provide a platform on which social movements from the North and the South, including conservationists, trade unions, small farmers movements and those movements from the South that defend a low environmental impact economy, can converge”. In particular, the conditions under which such convergence can develop must be better understood and patiently promoted. The lessons from Cuban agriculture are part of this understanding.

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