



Decent Employment and the Future of Agriculture. How Dominant Narratives Prevent Addressing Structural Issues

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Decent employment in agriculture is part of the general narrative about working conditions. It is an unquestionable objective but its position high in the international agenda contributes to sideline major structural issues faced by many agricultures around the world. This is particularly the case in sub-Saharan Africa and Asia, which represent about 90% of global agricultural workers, and where agriculture still plays a major role in employment and the economy. Different trajectories of structural transformation and rates of demographic growth result in different employment challenges which are central for possible improvement of work conditions in agriculture. However, the existing narrative about agricultural development remains shaped by the modernization paradigm based on technical progress and the centrality of the productive optimum. Its progressive adoption around the world has resulted in major productivity increases which deeply impacted agriculture through farm differentiation and concentration followed by a massive exit of farm workers. This process of change results today in major environmental and social sustainability challenges which prevent the replication of previous structural transformation pathways. Yet, the current policy architecture supporting agriculture promoted by international agencies and relayed in national policies continue to focus on the same modernization recipes. Framed by a market-led agenda, they are based on increased productivity and improved access to markets, and focus on a better provision of public goods. They target the “agripreneurs” who are able to adapt to the competitive economic environment. Attention is progressively paid to environmental challenges which results in a “smart-modernization” agenda based on sustainable intensification, while alternative approaches like agro-ecology remain limited to local experiences. Mainstream policies prevent addressing the continuing structural issues faced by many developing countries, as well as global sustainability issues. In that context, improving working conditions in agriculture is part of a necessary global approach about the development of the sector, where the multiple roles that agriculture plays beyond the production of food

and feed must be acknowledged and discussed. It implies a reinvestment in strategic thinking which has to be supported by new research about the labor content in agriculture and the agri-food sector, and by a consideration of existing local dynamics in order to identify adequate development models for agriculture.

Keywords: work in agriculture, decent employment, structural change, productivity gaps, agriculture modernization, agricultural policies, sustainable development, sub-Saharan Africa (SSA)

INTRODUCTION

Agriculture is the oldest activity of humanity. It answers the critical need of providing the necessary nutrient for survival and reproduction of human groups. Through the domestication of species and cultivation of nature, this activity mobilizing human work creates a central relation between societies and their natural environment. As such, discussing the future of work in agriculture is a powerful way to address more broadly the future of the sector, and beyond the future of our societies.

The labor content of agricultural activities (both the quantity and quality of labor) and its corresponding share in workforce employment inform about the trajectory of structural change of every economy and society. They also provide critical elements for identifying the existing room for maneuver for answering local and global demands: the way agriculture will provide food and feed as well as environmental and societal services relates to the type of labor-capital mix characterizing every farming development model and to its policy environment. What are the options for further roles of agriculture, and how can they contribute to the discussion of plausible futures?

However, the global discussion about the future of work in agriculture is today framed by an international agenda which focuses on decent employment. Among the 17 United Nations' Sustainable Development Goals, there is only one directly addressing work (SDG 8). It does not particularly refer to work in agriculture but it focuses on "decent work and economic growth" and the need to: provide full and productive employment and decent work for all with equal pay (target 8-5); end modern slavery, trafficking, and child labor (target 8-7); protect labor rights and promote safe working environments (target 8-8). The reference to decent work is also directly or indirectly present in seven other SDGs and in 11 of their targets.

As a consequence of this high positioning of decent work in the global agenda, the policy framework promoted by international agencies, which impacts international cooperation and donors' assistance programs, includes the conditions of employment as a key reference for any intervention. This necessary mention of decent employment is accentuated for agriculture because the sector has bad reputation. Worldwide, farmers' incomes are generally not attractive, even in many rich countries where they benefit from public subsidies. In developing countries (DCs)¹, which generally cannot offer subsidies to

support directly or indirectly incomes, and where safety nets against risks are most of the time inexistent, the situation is worse. Moreover, farm labor is considered difficult, very time consuming, and particularly arduous when mechanization, adequate tools and equipment are limited or do not exist. It explains the lack of attractiveness for youth who can access information about possible better employment options. In many countries where welfare systems do not exist, children are generally participating in the activities of the family farm—the dominant type of farm worldwide (Sourisseau, 2015)—as it was in rich countries a few decades ago.

Decent employment is an unquestionable objective, but the aim of this paper² is to highlight the fact that its position as a new narrative in the international agenda is first and foremost in the range of soft law, principles, and guidelines. As such, it results in a limited integration in and impact on the reality of policies and their main instruments. This meta-positioning of decent employment also contributes to the blurring of what the main challenges are. It particularly results in a disconnect from current structural issues related to major asymmetries between types of agriculture and types of farms, at the global and national levels, and to the unsustainability of the current development model.

The paper will first remind the emergence of decent employment objectives and initiatives and focus on the existing systemic disparities in world agriculture and their root causes. It will then propose a discussion of the foundations and development of the modernization paradigm which has shaped the development model and the existing narrative about agriculture, and refer to its consequences in terms of sustainability. The third section will show how the core objectives of productivity and profitability are central in the market-driven policies characterizing the agenda for agricultural development, which demonstrates that the improvement of working conditions is before anything else a general principle with limited impacts on the policy toolkit. It will also present possible adaptations or alternatives to the current development model answering its unsustainability. The paper will finally refer to the continuing structural issues faced by many developing countries and discuss the need for reinvestment in strategic thinking. This reinvestment will have to be supported by new research about the labor content

commonly used threshold of a gross national income per capita exceeding \$12,056 in 2021), which are generally members of the OECD (Organisation for Economic Co-operation and Development). Developing countries are "the rest" (Amsden, 2001), which is a very heterogeneous category sometimes referred to as the Global South.

²This paper develops the main issues presented in a keynote at the 2nd International Symposium on Work in Agriculture on March 30, 2021. The author thanks three anonymous reviewers for their useful comments.

¹The reference to development which has framed the international agenda since World War II (WWII) is always ambiguous because development is a very debatable and instable concept (Rist, 2003). Rich countries, that is preferred here to developed countries, correspond to high income countries (by the World Bank's

in agriculture and by a closer attention paid to the potential of place-based approaches for sustainable development.

DECENT EMPLOYMENT AND THE ICEBERG SYNDROME: THE OCCULTED SYSTEMIC DISPARITIES OF WORLD AGRICULTURE

Since the industrial revolution, the fight for acceptable labor conditions has developed with the rise of manufacturing and the wage system. It was for long a central issue limited to national struggles till the creation of the International Labor Organization (ILO) in 1919, which formalized relations between governments, employers, workers and their trade unions. The focus on decent employment as an overarching goal in the international agenda is more recent. It reflects socio-economic progress worldwide, the rising awareness about basic rights, and their recognition by the international community as central to the global goals for development, as defined first with the Millennium Development Goals in 2000, and then the Sustainable Development Goals in 2015.

The Decent Employment Agenda

Decent employment is fully embedded in the employment agenda which targets work for all and includes a particular attention paid to youth. This agenda has resulted into several international initiatives, the most recent and significant being the Global Initiative on Decent Jobs for Youth³, an inter-agency program launched by the United Nations (UN) in 2016 and coordinated by the ILO. All the existing programs support the endorsement of fundamental principles and rights related to labor conditions, employment and incomes, social protection and social dialogue. The foregoing results in many general policy recommendations, which are not specific to agriculture like, among others, the prevention of child labor, the promotion of education and vocational training, knowledge and information systems, and supportive business environment.

With regard to decent employment in agriculture, its importance in national debates and its translation into socio-economic and political pressure depend on the size of the agricultural workforce and the development of the welfare system. In rich countries, where the share of agriculture in employment is limited and where workers are protected, the discussion focuses on farmers' incomes and the specific situation of seasonal workers, who are frequently migrant workers and as such often employed disregarding national regulations. In DCs, where the weight of agriculture in employment is higher and can sometimes exceed 50% of the labor force, the situation is radically different. Labor regulations generally exist, but they principally apply to the formal sector (i.e., tax paying registered enterprises). Their enforcement in agriculture is limited or even inexistent due to the informal status of the large majority of farms and to the lack of human and financial resources for controls.

As a result, the specific initiatives which target decent employment in agriculture are *de facto* focusing first and foremost on developing countries, where employment conditions are more insecure and fragile, even if their assessment is more difficult. Specialized agencies like the ILO and more particularly the Food and Agriculture Organization (FAO) have developed programs⁴ which adopt the general recommendations on decent employment and add specific components which are related to the characteristics of the sector like access to land, credit, training, information and markets.

A major concern is that this emphasis on decent employment contributes to sideline other critical issues characterizing agriculture globally, which are decisive of the patterns of work in agriculture. It corresponds to what can be named the iceberg syndrome, where the focus on decent employment is the tip of the iceberg while the root causes are massively under the waterline. To illustrate this paradoxical situation, it is first necessary to introduce what the world landscape of agriculture is today.

Agriculture in Structural Transformation

A rapid reminder about the historical process of structural transformation is needed because it helps to put in perspective the current position of agriculture and the reasons for regional differentiation. Structural transformation refers to the observed historical change of economies and societies which was followed over the last centuries by the different regions of the world. It corresponds to changes overtime in the sectoral and spatial distribution of economic activities and people. A stylized summary of this process and its main determinants show the gradual transition from agriculture-based economies and societies to more diversified ones, based on manufacturing and then on services, in conjunction with urbanization.

This transition, rooted in the progressive development of capitalism, was facilitated by major technological changes supported by the adoption of fossil fuels resulting in the first industrial revolution. They led to impressive productivity gains facilitating transfer of labor and capital from agriculture to other economic activities. This process was accompanied by a progressive spatial restructuring from scattered activities (agriculture) to more concentrated ones (manufacturing), and a migration of labor and people from rural areas to cities, unlocked by huge progresses in transport and communication. The improvement of sanitary and life conditions also resulted in a demographic transition characterized by a progressive shift from high to low birth and death rates. The quicker decline in death rates due to medical progress (and its acceleration) explains the sharp population increase and then its weakening due to lower fertility rates (number of children per women) related to socio-economic changes and education.

This structural transformation process has many variations; it occurred and continues at different paces according to

³<https://www.decentjobsforyouth.org/>

⁴Can be mentioned ILO's Action Programme on Decent Work in Agriculture and FAO's Decent Rural Employment Program.

regional characteristics. Its general pattern, which is supported by statistical evidence (Johnston and Kilby, 1975; Timmer and Akkus, 2008) has contributed to a linear vision of economic and social change based on the replication of past processes which is challenged today. This pattern was observed first in Western Europe in the late eighteenth century with the agricultural and industrial revolutions; it then reached major European “offshoots,”⁵ Eastern Europe and Japan in the Nineteenth and early Twentiethcenturies; it developed next in other regions, albeit more unevenly, mainly after WWII.

In this process, Europe benefited immensely from its military and political hegemony, which gave the possibility of settler colonies and captive markets with little competition. Asia and Latin America (with strong differences) were able to rely on vigorous state-led modernization policies, started between the two World Wars in Latin America, after WWII in Asia, and which continued until the late 1970s and more in India and especially in China (Evans, 1995; Giraud, 1996). From the 1980s, the economic liberalization of the world economy rapidly led to globalization (Amsden, 2001).

Sub-Saharan Africa (SSA) did not benefit from the same historical sequence which explains why the sub-continent lags behind with regard to its structural transformation, with a lasting low economic diversification (South Africa being an exception). New African states only and mostly gained their independence from the 1960s, inheriting the former colonial borders with poor infrastructure and skilled human resources. They all had to adopt very restrictive structural adjustment reforms after two decades, or less, of partially autonomous public policies, and they engaged in globalization under very asymmetric conditions with regard to other regions and competitors (Gabas and Losch, 2008). These intertwined factors explain why SSA is still characterized by the importance of its primary sector (extractive industries and agriculture), the relative importance of its rural population, and a unique urbanization process without industrialization.

Facts and Figures: Orders of Magnitude in World Agriculture

These differentiated regional trajectories are critical in the understanding of the global picture of agriculture today: where are the agricultural workers and what are the main farms' characteristics according to the different regional patterns? However, an important caveat is needed: data on agriculture in DCs, where the overwhelming majority of agricultural workers is located, are weak, particularly in Africa. The frequency of agriculture censuses depends on national budgets, and as such most information is generally obsolete and incomplete. In addition, agricultural censuses prioritize production and therefore acreages, quantities and yields, rather than farm structures (types and size of holdings, agricultural workforce, and equipment) for which the information is even more incomplete. Specific surveys which are statistically representative at the

country level exist but they concern a limited number of countries⁶. As a consequence, the numbers provided for this discussion must be considered as orders of magnitude. As presented in Bélières et al. (2015) and Lowder et al. (2016), who are principally using FAO sources⁷, these numbers are based on existing data, and the regional averages used for international comparison only reflect the situation of a limited numbers of countries.

The first critical information for this paper relates to the number of agricultural workers⁸ and their location. According to the ILO⁹, in 2018 there were 1.35 billion workers in the sector, which makes agriculture the first sector of employment in the world. The overwhelming majority of these workers are in Asia (70%, of whom 29% in India and 19% in China) and in sub-Saharan Africa (23%), to be compared to the 13 million agricultural workers of the European Union (1% of the world total). These major differences reflect the demographic weight of the different regions, as well as their economic diversification and level of urbanization which result in other employment opportunities. The share of workers in agriculture is decreasing everywhere except in sub-Saharan Africa, sharply in rich countries since the 1950s, less in DCs but at very different paces. Yet, this decreasing share is partly compensated by a continuing growth of the rural population in South Asia, at least till the 2040s, and in SSA where it will continue to grow globally after 2050 (Dorin, 2017).

The contrasted reality of agriculture in the world can be highlighted with two core basic indicators: the size of farms and the productivity gaps. About 73% of farms have <1 ha, 12% between 1 and 2 ha, and 9% between 2 and 5 ha. Therefore, only 6% of farms have more than 5 ha, and in this group <0.5% have more than 100 ha (Figure 1). This predominance of small farm sizes results from the importance of agriculture in Asia and Africa where about 95% of farms in China and 80% in India and Africa have <2 ha. In other regions, farms are less concentrated in the lower part of the size distribution: about 20% of farms in Europe have more than 10 ha, and the larger farms are found in the Americas and Oceania—principally Australia and New Zealand—where half of farms have more than 10 ha. North

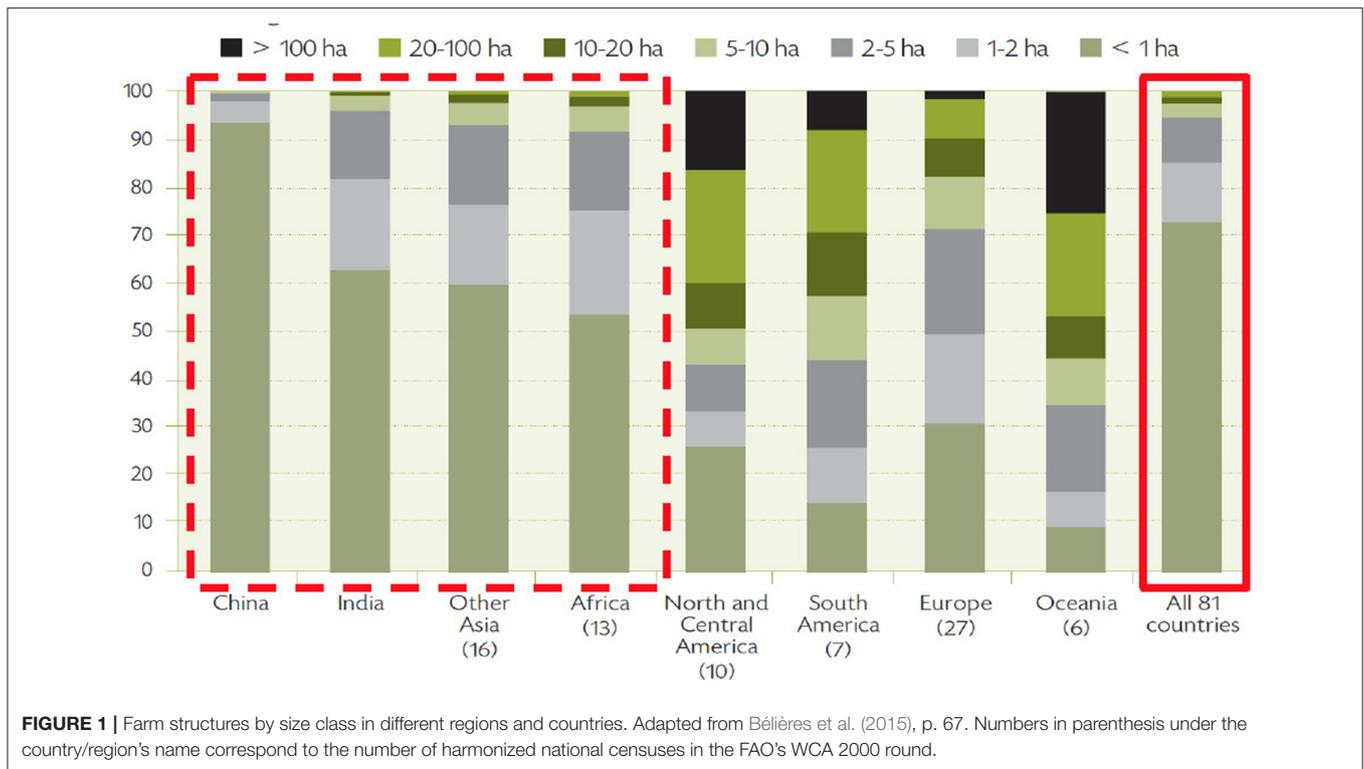
⁶A good example is the World Bank's Living Standards Measurement Studies. LSMS have a specific component targeting agriculture in Africa supported by the Bill and Melinda Gates Foundation (LSMS-ISA: Integrated Surveys on Agriculture) which covers eight sub-Saharan African countries.

⁷The FAO runs a program for the World Census of Agriculture (WCA) which supports national censuses and harmonizes on a 10-year basis information provided by countries. The WCA 2020 round is only starting. The first results of the WCA 2010 round were published in 2021 (FAO, 2021). Bélières et al. (2015) use the WCA 2000 round which covers the period 1996–2005. Lowder et al. (2016) use the 2000 and previous rounds, as well as LSMS data and specific national censuses. The WCA 2000 round consolidates data for 114 countries but only 81 countries for farm sizes.

⁸The active agricultural population is the economically active population (aged between 15 and 64) “engaged in or seeking work in agriculture, hunting, fishing and forestry.” It includes waged and self-employed, as well as permanent and temporary workers (see: <https://ilostat.ilo.org/resources/concepts-and-definitions/>).

⁹ILO data accessed through the World Development Indicators (retrieved in January 2022).

⁵The United States and Canada, Australia and New Zealand, and other countries such as Argentina with significant European settlements.



America and Oceania have the bigger proportion of farms over 100 ha (about 25 and 15%, respectively).

When looking at productivity, differences are even more dramatic. Using the stylized figures discussed by Mazoyer (2001) based on hectares per worker and yield per hectare of grain-equivalent depending on the type of technical systems (type of traction and adoption or not of the Green revolution package)¹⁰, **Table 1** below proposed by Losch (2015a) shows an estimation of productivity gaps in agriculture. The higher gap is in the minimum range of 1 to 1,000 tons of grain-equivalent per worker. The reality of the sector is that only about 65% of agricultural workers are using improved seeds and chemical inputs, at various levels of intensification, which strongly impacts annual yields. Then, about two thirds of workers (860 million) do not have access to mechanized traction and rely on manual tools only; less than a third are equipped with animal traction (410 million); and a tiny share of only about 30 million have tractors. Such differences dramatically impact on the number of cultivated hectares by workers.

TABLE 1 | Stylized productivity gaps across different technical systems.

Type of system	Ha per worker	Tons per ha	Tons per worker
Manual	1	<1	<1
Manual + GR	1	5–10	10
Animal traction + GR	5	5–10	50
Motorized traction + GR	100	5–10	1,000

Adapted from Losch (2015a, p. 23).

Yields per hectares (ha) and ha per worker have no statistical value. They only indicate orders of magnitude and refer to the highest values for main grains with or without the Green Revolution (GR) package. With high power motorization, ha per worker can be >100 ha.

These different components directly influence the profitability of farming activities: farm sizes, area under cultivation and yield levels are significant contributors of the gross farm income which is a central determinant for decent employment: how much a farmer and therefore farm workers can get in terms of income from their work? Are these incomes enough to sustain their livelihoods and to offer good conditions of work?

Of course, these components are not the only factors of profitability. Strong controversies exist about farm sizes and the respective benefits of small vs. large scale agriculture, a discussion blurred by overlapping farm categories including smallholders, commercial, family and business farms (see among others Hazell et al., 2007; Collier, 2009; Collier and Dercon, 2009; Losch and Fréguin-Gresh, 2013; Sourisseau, 2015). But the reference to size is only partly relevant because the local context shaped by agro-ecological conditions and socio-economic history

¹⁰The Green Revolution corresponds to the large diffusion of a technical package based on improved seeds and chemical inputs. Mostly implemented in South and South East Asia after WWII, it was an answer to recurring food crises in a context of booming population growth at a time when Asian perspectives were sobering (Myrdal, 1968). It was supported by huge transfer programs and foreign aid in the context of the Cold war and considered by the USA as a way to “contain” the spread of communism in the region. Funding for international agricultural research and the creation of specialized research centers (which resulted later in the creation of the CGIAR—Consultative Group on International Agricultural Research) must be viewed in this specific context.

plays an important role in defining farming options. Farm sizes cannot reflect the possibility of animal production and access to commons, which continue to play a critical role for sustainability in many DCs' farming systems. Similarly, if yields and total production determine gross income, the later depend on the type of products and their value, as well as the type of connection to markets which determines the farmers' share of the final price. Last but not least, the final income is deeply shaped by the economic environment and the importance of support policies with regard to access to inputs, credit and capital, and to the provision of services (training, extension, risk management) and public goods (information, knowledge, education and research).

Systemic Disparities Between the Main Regions of the World

Based on the foregoing, it is possible to propose a synthetic summary of these very contrasted regional situations. Richer countries are characterized by their economic diversification resulting in the massive exit of workers from agriculture toward others sectors, including a shift in the agri-food economy (Christiaensen et al., 2021), with a low share of the labor force remaining in agriculture (under 5%). This has contributed to farm consolidation and rising farm sizes. In spite of strong productivity increase based on farm capital with investments in infrastructure and equipment, labor shortages in the sector can be a critical issue. They are answered by outsourcing and the organization of seasonal workers' supply, often migrant workers for whom labor regulation are *de facto* not fully enforced, and by the emergence of automated agriculture based on artificial intelligence. The general process of capitalization has resulted in the full reliance on external production factors provided by the market.

In developing countries, disparities are more pronounced and situations depend on the size of the labor force engaged in agriculture and its evolution, the dynamics of urbanization, and land availability. As highlighted above, the heavy weights are Asia and SSA. With high levels of agricultural employment, in average 30–60% of the total labor force (but shares can reach 80% and more like in the Sahel in West Africa), small farms are the majority and characterized by low capital and low productivity. But different dynamics are observed (Masters et al., 2013). In Eastern Asia, particularly China, the slowdown in total population growth and continued urbanization lead to a decrease of rural population and on average to a progressive rise of land sizes per farmer. Increased labor productivity is necessary to deal with the upcoming labor shortage. In South Asia and SSA, improved labor productivity is an objective but there is a necessary trade-off due to the importance of rural labor force. Where rural population growth continues, employment alternatives in other sectors, and land availability are critical. Where land availability exists, access policies, and adequate infrastructure can support farm development; if not, land pressure will increase, with high impact on natural resources, and can result in growing economic and social tensions. It will require higher outputs supporting more workers per hectare (through increasing yields and product value). In the specific

case of SSA, tensions are growing rapidly due to the continuing strong demographic increase which impacts natural resources and particularly the forest (Chamberlin et al., 2014), although significant country differences exist due to changing fertility rates like in Southern Africa. Limited employment opportunities due to the slow pace of industrialization—even if the food sector develops (Allen et al., 2018), and barriers to international migrations out of the continent result in short term and circular rural-urban migration and the emergence of new rural livelihoods based on multi-activity and multi-localization (Alobo Loison, 2015; Mercandalli et al., 2019).

In South Asia and particularly in SSA, due to growing asymmetries in a global open economy, the historical transformation pathway presented above, characterized by strong economic diversification and massive transfer of labor to other sectors, appears impossible in the next two to three decades (Losch, 2016). It contradicts the core belief of the concept of development based on replication and catching-up. Due to the demographic weight of the two regions (38% of world population today and 46% in 2050), this plausible dead-end of the historical pathway is a major global concern, and the evolution of agriculture will play a critical role due to its remaining importance.

These systemic disparities in world agriculture are “under the waterline” of the international debate. The discussion on the future of work in agriculture and decent employment cannot avoid this reality where the overwhelming majority of agricultural workers face the risk of a possible continuing impoverishment and deteriorated labor and life conditions. Yet, existing policy orientations and technical answers do not address these contradictions.

THE CONTINUING DOMINANCE OF THE MODERNIZATION PARADIGM

The policy answers to the challenges of the agricultural sector are quite similar across countries and regions in spite of major structural differences. They result from the general adoption of what can be named the modernization paradigm, rooted in the historical transformation of the sector, which has shaped the range of agricultural policies and a global narrative about what agricultural development must be. Even if challenged today by sustainability imperatives which require adaptations, the core of this paradigm remains unchanged.

Foundations, Development and Consequences

Due the strategic nature of food, agriculture has always occupied a prominent place in governments' agendas. It has been an “*affair of state*” (Coulomb et al., 1991, p. 1) and, together with fiscal policies, agriculture was central in the first interventions of modern states. Three major objectives structured governmental action. The first was to increase food supply by supporting productivity growth and agricultural land expansion in order to feed the people: the farmers and the rest of the population, which

was growing with urbanization and economic diversification. It was a condition for political and social peace and state continuity.

The second objective was to facilitate accumulation for economic diversification using productivity increase and direct and indirect taxes to stimulate the transfer of capital and labor from agriculture to other sectors. The third objective, which was generally delayed, was to support economic and social progress by improving farmers' incomes. This objective arose more firmly in the new representative democracies where peasants were for long the electoral base and were able to organize lobbies. It was then part of the adoption of welfare policies in many countries after WWII.

The importance of agricultural supply and productivity growth deeply shaped public intervention and led to the adoption of the modernization paradigm which has developed and spread worldwide from the Nineteenth century. This paradigm, rooted in the technical progress conveyed by the industrial revolution, remains central today. It is based on successive technological revolutions characterized first on progressive mechanization with new tools grounded on the advent of the steam engine and the large adoption of mineral fertilizers, then on the development of motorization, new chemical fertilizers and pesticides with, in parallel, seeds improvement including recent genetic modifications (Mazoyer and Roudart, 1997). These different stages have resulted in massive productivity gains. According to Bairoch (1989), productivity in agriculture, which barely exceeded 1% per year in the Nineteenth and the beginning of the Twentieth century, jumped to reach 5% per year from the 1950s. This increase is largely higher than any progress observed in other sectors; it is also considerably above population growth.

These successes have consolidated the modernization paradigm and its core objective of a "productive optimum," corresponding to the best combination and use of existing production factors and their improvement through innovation, in order to maximize returns to investment and profit. Therefore, according to this paradigm and to escape the backwardness of "traditional" agriculture, it was critical to adopt new techniques and new management as the way to increase efficiency through economies of scale, production specialization (implying the end of farmer's self-consumption and mixed cropping), and deeper economic integration into value chains. These changes developed hand by hand with the overall transformation of economies and the evolution of food systems, characterized by changing diets, linked to improved livelihoods and urbanization, by the rise of agri-food industries, and the development of modern retailing through the "supermarket revolution" (Reardon and Timmer, 2007).

The result of this growing integration of agriculture was a movement toward "professionalization," where multi-tasking peasants were progressively becoming farmers, then specializing from technician to manager-entrepreneur, with increasing disconnection from the peasant's way of life rooted to its rural setting. This evolution led Mendras (1967) to proclaim the "end of peasants" and Shanin (1974) to advance the concept of "agriculturization" (in the sense of agricultural industrialization).

This process of modernization and technical change spread in every region of the world but at very different paces and scales, depending on the structural characteristics of national contexts. In high income countries, the need for investment related to the new requirements of modern value chains and to the speed of technical change resulted in strong marginalization, and then the phasing out of farms which were lacking the capacity for permanent technical upgrading. It resulted in a massive exit of workers from the agricultural sector, facilitated by the development of other sectors. It raises the question of a "world without farmers" (Timmer, 2009).

In the other regions of the world, the situation is far more diverse. A more limited modernization process results in a strong heterogeneity with many variations between the large majority of farmers, who are principally using manual techniques with a very low labor productivity, and limited segments of highly capital-intensive agriculture, generally large farms or estates. The Green Revolution broadly spread in Asia and Latin America but was drastically limited in SSA. The advent of a world without farmers will definitely not occur soon (Dorin et al., 2013).

Nevertheless, despite evidence about the variability of contexts, roles and forms of agriculture, the modernization paradigm, based on the narrow objectives of optimizing the production function and maximizing returns, continues to shape agricultural policies—even if rarely so explicitly. As such, it also frames the support to small farmers, who remain the majority of agricultural producers in the world today. A useful illustration of this dominant paradigm is provided by the World Bank's World Development Report 2008 (WDR 08) on agriculture (World Bank, 2007), which offers a vision of development rooted in the replication of past processes of structural transformation. This report, which received a worldwide audience, has contributed to the consolidation of mainstream thinking.

The report acknowledges the importance of rural poverty in today's world and the role that can be played by agriculture to alleviate the number of rural poor. It identifies three distinct "worlds of agriculture"—agriculture-based, transforming, and urbanized countries—depending on the contribution of agriculture to growth and the importance of rural poverty. In each world, the role of agriculture is specific but the options to get out of rural poverty for rural people are the same: become an agricultural entrepreneur, become a waged worker in any rural activity, develop an activity in the rural non-farm economy, or migrate to cities or abroad.

For smallholders, if they want to continue in agriculture, there is only one option: become an entrepreneur and reach viability and profitability through the adoption of the so-called "conventional" technical package and a complete integration into value chains. If this transformation cannot be managed, they will have to exit the sector and possibly exit the rural area or the country where they live. This WDR's view is a good stylized summary of the modernization paradigm and its expected outcomes. It helps to understand the rationale and main objectives of existing policy support to smallholders: perform better in order to reach the status of entrepreneur. And this critical policy debate is far away from the discussion of decent employment in the sector.

Cracks and Breaches

A major argument to challenge the replication of past structural transformation processes relates to the physical limits of the current growth regime, based on its massive requirements in fossil fuels and other non-renewable natural resources, which has resulted in huge negative externalities, particularly climate change. The related threats raised for half a century (since the Club of Rome report in 1972) are now central in the international agenda and at the core of the SDGs. The stock of global resources, which cannot accommodate the continuation of the same extractive model, and the constraints relative to the adaptation to the changing natural environment (new climate patterns) prevent the catching-up by the rest of the world through the same rich countries' pathway. As such, it dismisses a core assumption of development economics and calls for another development model (Gabas and Losch, 2008). Agriculture, which fully adopted the characteristics of past technical revolutions, cannot escape this global challenge.

Yet, the modernization paradigm allows massive productivity gains; but the unsustainability of production systems relying on chemical inputs based on non-renewable fossil fuels and on a few selected seeds and GMOs results in additional threats. Biodiversity is collapsing due to pollution by chemicals; micro-climates are changing due mono-cropping on large surfaces; the efficiency of costly fertilizers is reduced¹¹. These observations lead to a progressive awareness about the need for changing agricultural practices and for moving from the uniformity of technical solutions to the diversity of local answers (IPES-Food, 2016).

The unsustainability of many regional food systems is an additional challenge. The industrialization of food related to the process of vertical integration along value chains, structured by major agri-processors and retailers has major effects. The first and massive impact is on human health due to new diets, with the explosion of non-communicable diseases (obesity, diabetes, hypertension) and huge consequences on child development and global welfare (Popkin, 2006). Another dimension is the impact of big agri-food industries and retailers on local development (McMichael, 2005), because economic concentration hampers the emergence or continuation of local businesses in processing and in the marketing space.

All these challenges to the modernization mainstream are echoed by multiple contestation movements from producers to consumers and to civil society organizations (Holt Giménez and Shattuck, 2011). They develop with differences in every region of the world, in rich countries where the societal model is challenged, as well as in developing countries where they can meet political action or indigenous movements, like in Latin America. This contestation is rooted in the critique of the productivist model and its downward slide, synonym of ecological crisis, junk food and health problems, dependence on the agri-industrial and modern retail sectors, unsustainable

pursuit of chemicalization, leading farmers into financial dead-ends where they can be trapped in bank indebtedness. Contestation movements bring back in or consolidate the figure of the peasant¹², call for food sovereignty, for local food systems, and for the recognition of the multiple roles of agriculture (Murphy, 2012).

DESPERATELY SEEKING DECENT EMPLOYMENT IN MAIN POLICY ANSWERS

In spite of the contestation of the modernization paradigm, the policy mainstream firmly holds on its basics, with productivity and economic profitability as core objectives. In that context, conditions of work in agriculture and decent employment are present in the policy debate but they are definitely not central in the agenda. Except a few dedicated projects, they are included in a package of principles, guidelines and general objectives which could be compared to a declaration of rights at the preamble of a modernization strategy. In order to fully appreciate the gap between principles and operational practices, it is important to review the rationale of existing policy answers and the characteristics of the related policy toolkit.

Due to liberalization policies implemented from the 1980s, the role of governments is limited today to the correction of market failures, principally public goods, and to the facilitation of private sector's role for supporting continued modernization. However, it is important to remind that this private-led approach to agricultural development is relatively new when compared to the propagation of the modernization paradigm since the end of the Nineteenth century. For long, public policies have deeply shaped the development of the sector, particularly in today's rich countries. Governments supported first technical innovations (initially resulting from private initiatives) with the development of public agricultural research in relation to the emergence of agronomic science. Then, they aimed at progressive support to all types of farms, most notably with subsidized technical packages, extension, and price support (e.g., marketing boards), regulations and protections (mainly through tariffs), a major example being the Common Agricultural Policy of the European Union (EU).

This type of support is today denied to developing countries (Chang, 2009) and banned by the World Trade Organization (WTO) in order to avoid market distortions. However, farmer support is still very significant in many countries (e.g., the EU or Japan), even if formally decoupled from production, according to WTO's rules, and targeted on environmental services and food safety.

The existing market-led agenda which has developed over the last three decades is consolidated by the alignment of donors and international organizations¹³, formalized by major

¹¹This is particularly true in tropical areas where soil degradation (acidification, loss of soil organic carbon, and micronutrients) due to continuous cultivation and lack of crop rotation are major risks, particularly where high population densities exist (Affholder et al., 2013; Tittonell and Giller, 2013).

¹²The creation of Via Campesina (the peasant's way) in 1993, which brings together farmers and farm workers from all regions of the world (in 70 countries), is in line with these multiple perspectives.

¹³Can be cited: the main donors for agriculture (World Bank, International Fund for Agricultural Development—IFAD, several bilateral aid agencies, regional banks like the African Development Bank), other UN agencies (FAO), regional

alliances and development programs—like the CAADP¹⁴ in Africa, which results in a unified vision available for budget-constrained governments. Its objectives are a modernization based on increased productivity and improved access to markets, which are supposed to result in better profitability for farmers.

The Market-Driven Policy Architecture

The existing policy toolkit can be divided into two broad categories related to institutional and market environments (HLPE, 2013; TFRA, 2019). The first category pertains to public goods, namely the basic infrastructure, the rule of law, education, training, information, and research. If the development of roads facilitating the opening of rural areas is a necessary step in many places, a major attention is paid to the consolidation of a conducive legal framework for smallholders. It concerns first land rights because in many regions, particularly SSA, agricultural land is generally governed by customary arrangements. The main focus is to secure land access and usage rights based on effective practice and collective recognition. It is supported by the adoption of common frameworks like the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT).

The second theme of attention is about addressing the missing legal status for smallholders and family farming, because in many countries youngsters, men and women, cannot access land tenure and farm management which are under the control of elders (a critical issue which was and is faced everywhere). This prevents initiatives and technical innovations that young people could more easily adopt. Giving a legal status to family farms can ease the intergenerational transfer of farm assets to young family workers, as well as their access to collective assets. Rights and status of family workers, particularly youth and women, and decent work regulation are part of this agenda.

Another area of attention is the improvement of research, education and innovation systems through a combined approach supporting “knowledge triangles” (research-education-innovation) based on multi-stakeholder knowledge platforms and innovation hubs considered as more efficient than traditional linear top-down research systems (TFRA, 2019).

The second category of instruments concerns the improvement of different types of markets (agricultural products, inputs, credit, extension, and insurance), because they are often underdeveloped and imperfect, due to missing information, monopolies and oligopolies, weak regulation, inadequate or lack of supply. It limits access to the modernization package (fertilizers, pesticides, herbicides, and high yield selected seeds) and results in high transactions costs which impact profitability.

To facilitate access to inputs, equipment, services and information, business solutions are the preferred answers. The general approach provides a couple of soft law instruments which

have been endorsed by governments, regional organizations, agencies, and civil society organizations to support the respect of common guidelines. They include the adoption of transparent rules and appropriate consultation and participation of stake and right holders which can be referred to in policy dialogue and discussion with the private sector. In addition to the VGGT, already mentioned, endorsed by the Committee on World Food Security (CFS) in 2012 (CFS, 2012), the Principles for Responsible Investment in Agriculture and Food Systems (known as RAI), endorsed in 2014, target sustainable and inclusive economic development, gender equality and women’s and youth’s empowerment, the respect of tenure and of access to natural resources, as well as cultural heritage and traditional knowledge (CFS, 2014).

The Main Policy Toolkit

Beyond these guidelines, which could be qualified as a litany of principles, three types of tools are considered and preferred for operationalization. They have different objectives characteristics and amplitude, but all contribute to the core targets of the modernization paradigm: productivity and profitability. They consist first in formal partnerships between public and private actors, and in funding vehicles to support investments. Then, they relate to public incentives supporting agriculture’s development through taxes and smart subsidies. Finally, they correspond to contractual arrangements between private actors (principally farmers and agri-businesses), which can be considered as the “*voie royale*” because they can facilitate access to markets with secure selling and prices and also ease the provision of inputs and services.

Public-Private Partnerships (PPPs) have been a mantra since the worldwide implementation of liberalization policies. They are the proposed answer for the funding of major investments. However, in its review of PPPs, FAO (2016) points out the difficulty of their implementation in agriculture due the extreme differentiation within the sector. The FAO’s review identifies four main groups of agricultural PPPs targeting value chains development, joint agricultural research, innovation and technology transfer, market infrastructure, and business development services to farmers and small enterprises. Though, despite their diversity, they all tend to favor main players—large farm enterprises and agri-businesses, and to exclude smallholders who are missing the necessary skills and assets to be on board.

This is why, facing the huge investment gap for supporting the development of agriculture in DCs, specific multi-stakeholders’ platforms (MSPs) have been progressively implemented to facilitate fundraising, resource mobilization and to channel finance. MSPs can be defined as collaborative arrangements between stakeholders from different spheres (public sector, private sector and/or civil society), pooling their resources together, sharing risks and responsibilities in order to ensure the production or delivery of an outcome of collective and/or public interest (HLPE, 2018). Among the MSPs dedicated to funding, it is possible to cite: the New Alliance for Food Security and Nutrition (NAFSN), launched at the 2012 G8 Summit, and dedicated to the promotion of responsible private investment in

organizations (e.g., the African Union). The Global Donor Platform for Rural Development, a network bringing together many of these organizations (39 to date), facilitates coordination and contributes to alignment.

¹⁴The Comprehensive Africa Agriculture Development Programme is a pan-African framework adopted by the African Union (AU) in 2003 which is an integral part of the New Partnership for Africa’s Development (NEPAD), today the AU’s development agency (AUDA-NEPAD).

African agriculture benefiting small farmers¹⁵; the Grow Africa Partnership, founded in 2011 by the AU, NEPAD, and the World Economic Forum (WEF), grouping over 200 companies and governments in 12 countries; the Initiative for Smallholder Finance (ISF), led by private foundations in collaboration with USAID and proposing innovative solutions like covering lending risks for farmers.

The second type of tools corresponds to public incentives. Because subsidies, which were for long the backbone of agriculture's development, are considered as major market distortions, the approach is to provide incentives to input, equipment and services providers. They consist in tax reductions to foster the implementation of providers' networks in contexts where low income farmers or accessibility problems (e.g., distance and bad roads) prevent profitability. The support to information systems giving access to information about types of products and services, prices and location of providers, is an additional approach. It also helps (or is supposed to help) competition between private providers in order to get right market prices to the benefit of farmers.

However, in spite of the overarching "subsidy ban," it is increasingly acknowledged that subsidies can be necessary due to the amplitude of needs, at least for a transitional phase. The bending of the rule has resulted in the innovative definition of "smart subsidies" which consist in public support with well-identified targets and time duration. These smart tools are mostly used today for input supply (e.g., fertilizers), notably with the development of voucher systems, with diverse evidence in terms of impacts (Chirwa and Dorward, 2013; Ward et al., 2021).

Contractualization between farmers and downstream economic agents (processors, brokers, wholesalers, agribusinesses, exporters, supermarkets' procurement services) is the last type of tool. It has developed through different options of contract farming, which can be defined as "a sales arrangement between a farmer and a firm, agreed before production begins" (Ton et al., 2018, p. 46), which secures a price and possibly provides the farmer with resources or services. In practice, the specific terms and structure of these contracts can vary quite dramatically and correspond to a gradient between the spot market (i.e., no contract) and vertical integration (i.e., when the production is fully incorporated in the buyer's enterprise). Major technical changes in agriculture and food systems related to ICTs¹⁶, processing, storage, and transportation have contributed to rapid integration into national and sometimes global food value chains (Christiaensen et al., 2021). This integration

which initially characterized high value products (fruits and vegetables) is now complemented by the "quiet revolution" which reaches staple foods through direct sourcing between producers, processors and storage outlets (Reardon et al., 2012). Large agribusinesses have become powerful players, with a capacity to provide credit, technology, and information. They are viewed, particularly in Africa, as the main driver for change and modernization, with the capacity to transform the subsistence-oriented sector into a "more commercialized, profitably productive, and smallholder and entrepreneur-led" agriculture (AGRA, 2019, p. vi).

However, if opportunities for easier smallholders' integration into value chains are real, some strong caveats about the development potential of contract farming are needed (Oya, 2012). They consist in possible risks of regional and farm marginalization (Soullier et al., 2019) because agribusinesses are not development agents: in order to reduce their costs and uncertainty, they tend to target the producers who can most easily meet their quality standards, which results in the exclusion of the already less endowed smallholders. They can also outsource the riskier crops and directly produce the most profitable. In terms of benefits to the farmers, there are also mixed results (Bellemare and Bloem, 2018; Ton et al., 2018) due to lack of trust between parties, delayed payment, price cuts, or rejection of the product on the buyer's side (Barrett et al., 2012).

Finally, impacts of contract farming must be put in perspective when compared to the importance of agricultural population and rural poverty: which types of value chains are concerned, in which areas of a country, and for how many smallholders (Ragasa et al., 2018)? In developing countries, the proportion of farm households involved in contract farming is only estimated around 1–5% (Devaux et al., 2016) and in practice, in Africa today, most of the production is still sold through traditional marketing channels with middlemen and other intermediaries who resort to informal arrangements (Losch et al., 2012).

In the case of SSA, these business solutions are all rooted in the existing major agricultural development programs. This is the case of the CAADP, already mentioned, but also of the current African Development Bank's strategy for agricultural transformation (2016–2025) which uses the same arsenal of policy orientations and related tools: increased productivity; improved downstream markets; enabling infrastructure development; catalytic agricultural finance; improved agribusiness environment (AFDB, 2016). The Alliance for a Green Revolution in Africa (AGRA), created in 2006, is another major actor adopting the same perspective with a strong focus on the Green Revolution package (mostly fertilizers and improved seeds)¹⁷.

Toward "Smart-Modernization"?

With reference to the cracks and breaches in the modernization paradigm, one can consider that the current trend *de facto* leads to a continuing externalization of the impacts of the modernization choices on the natural environment, and also on

¹⁵The New Alliance has been heavily criticized by many NGOs considering that it first favors the interests of transnational business corporations. External reviews have led to the withdrawal of some founding partners (Pascal et al., 2014; Alpha and Sédogo, 2017).

¹⁶In addition to banking facilities provided by Information and Communication Technologies (ICTs), Digitalisation for Agriculture solutions (D4Ag) are presented as a major option for helping Africa to accelerate its agricultural modernization (CTA, 2019). The sector is booming with many start-ups and service providers proposing integrated precision cultivation solutions, pest and disease surveillance or weather management. However, for now, many barriers remain preventing a strong development: limited connectivity, lacking infrastructure, cost of operating a mobile phone and accessing internet, skills to manage the growing sophistication of D4Ag solutions (Mabiso and Benfica, 2019).

¹⁷Among the funding partners are Yara (the world biggest fertilizer company), the Rockefeller Foundation, the B.M. Gates Foundation and the usual donor agencies.

public health systems due to its consequences on human health. This is a significant example of market failure where the negative externalities of agricultural production are not costed.

Considering these negative impacts, the identification of adapted pathways to sustainable agriculture are critically needed. However, this is a major challenge due to insufficient knowledge and dedicated research in specific regional contexts, particularly in developing countries (Côte et al., 2019). Multiple initiatives exist, which promote different approaches relying on diverse technical, socio-economic, and policy options. It results in a vast array of proposals, promoted by different stakeholders and lobbies, and often leading to controversies and partisan visions. There is however an agreement about the importance of identifying answers adapted to local contexts and including farmers in the search for responses to the challenges they face.

To address the consequences of conventional intensification techniques, sustainable intensification is promoted considering intensification indispensable to answer the needs of agricultural supply in a context of growing demand (Pretty et al., 2011). What is proposed is a careful use of external inputs and the full usage of ecosystem resources. The main approaches are conservation agriculture and climate smart agriculture, and Windmeijer et al. (2017) advocate for an “eco-technical pathway” combining the rational use of biotechnology with a “modest” utilization of external inputs (i.e., chemicals), irrigation and mechanization, compatible with ecological cycles. These options are adaptations to mainstream modernization (Mahon et al., 2017) which can be combined with continuing conventional technologies (Pimbert, 2015). They could be named “smart modernization” with reference to the smart subsidies option.

These “go-between” approaches which are trying to adapt the modernization paradigm to the sustainability challenge are strongly rejected by the advocates of agroecology who adopt a more radical approach based on natural processes, using beneficial on-farm ecosystem interactions in order to reduce off-farm input use and improve farm efficiency (AFSA, 2016; HLPE, 2019). The key objective of agroecology is the diversification of farming systems through practices such as mixed cropping, intercropping, agroforestry, and livestock integration, as a way to amplify the positive effects of biodiversity on productivity through better use of sunlight, water, and soil resources, and the enhanced regulation of pest populations (Altieri et al., 2012).

Two major obstacles exist for the development of a new paradigm and the effective implementation of new technical options. The first is that evidence is missing about the labor content of agro-ecological practices: what is the necessary time to be invested per hectare of various crops? And what are the effective outputs and outcomes in terms of production and positive impacts on the environment? As a consequence, the existing returns per hour worked are insufficiently known. This uncertainty prevents large engagement and effective policy support beyond the funding of specific initiatives. The second obstacle is that farmer support remains today almost entirely directed at subsidizing the conventional toolkit. As reminded above, in Africa, international support continues to push toward the dissemination of the conventional modernization agenda, which results in major obstacles to a most needed transition

(see for example the Zambian case illustrated and discussed by Swanepoel et al., 2015).

In order to fund the transition toward agroecology and improved environmental practices, two objectives must be targeted. Subsidies for degrading practices, for which there is a massive resistance of the “agro-chemical complex,” must be removed; then, incentives for sustainable practices maintaining and restoring natural ecosystems and the services they provide, must be implemented. It connects with the smart subsidies discussion, already mentioned, and to the possibility to develop payments for environmental services (PES) which are conditional transfers.

Conditional transfers, initially designed for poverty alleviation, have been progressively extended to sustainability objectives. Two types of PES can be observed from the existing experiences (Karsenty, 2015): the use-restricting PES, which are collective contracts with communities, rewarding them for preserving specific ecosystems; the asset-building PES, which support farmers in the adoption of environment-friendly practices. Farmers receive payments generally based on labor costs invested in new techniques and specific landscape management, as well as the use of specific species. The development of PES remains limited because it implies necessary certification and monitoring systems, the implementation of which can be difficult and result in additional costs; but these costs should be covered by governments and the international community because they address a market failure.

If a radical shift toward a new alternative model looks difficult due to the existing balance of power, an evolution of policy support is reachable and PES appear as one of the most accessible and promising options, which can also contribute to farmers’ incomes and their diversification. It means adequate budget but earmarked taxes and broad base and low rate taxes (e.g., one cent per phone call) are possible solutions for funding. But what is needed first is political will. Thereby it is worth mentioning the experience developed by the state of Andhra Pradesh in India, where nearly one million farmers have adopted agro-ecology with the support of a massive information and peasant to peasant training program (Dorin, 2022).

DISCUSSION AND RECOMMENDATIONS

The dominant narrative about agricultural development focuses on the increase of productivity and economic profitability which continues to shape the main agricultural policies. The inclusion of new objectives taking into account sustainability issues results in possible improvements of agricultural development outcomes but they are far from changing the cornerstones of the modernization paradigm. The market-driven policies adopted over the last three decades limit governments’ action. They prevent the substantial support, which existed in the past in today’s rich countries, which would be necessary to improve the conditions of the masses of farmers and agricultural workers, including their working conditions, and to help them to deal with the challenges of market requirements and adaptation to climate change.

Continuing and Unresolved Structural Issues

The quick review of existing development programs which are currently structuring international initiatives reminds that the core target of interventions is not farmers but rather “agripreneurs.” This target echoes the perspective proposed by the World Bank’s WDR 08: priority must be given to those who are able to become entrepreneurs and to reach a successful and profitable integration into value chains.

This policy positioning cannot help answer major structural dead-ends. The first corresponds to the challenge of absorbing a growing rural labor force in South Asia and SSA. In most countries of these regions, beyond significant heterogeneity, the risks of marginalization within agriculture result from major productivity gaps between farm types and with international competitors, while employment alternatives outside of agriculture are limited.

The situation of SSA is the most critical because the economic transition toward more diversified economies remains incipient (Losch, 2015b). Only a couple of countries show a progressive shift due to exports diversification (McMillan et al., 2013). Because industrialization is lacking, which can be explained by the historical conditions of SSA countries’ integration into the world economy (Gataloup, 2007), the main alternative to agriculture continues to be the urban informal economy, particularly services. It generally provides low returns and difficult working conditions, even if some segments of the informal sector can bring positive change (Ranis and Stewart, 1999; Fox and Sekkel Gaal, 2008). But the structural employment reality in SSA is the continuing large share of jobs in agriculture. According to estimates by Filmer and Fox (2014), 62% of the working population are in farming activities, 22% in household enterprises (mainly services), and the remaining 16% are in the formal sector (3.2% in manufacturing, 12.8% in services—particularly government). In addition to the absorption capacity of African economies outside agriculture, vertical integration and globalization hamper the linkages between agriculture, rural diversification and local development, which were decisive in past transitions, because cheap imports can easily answer local needs (UNRISD, 2010).

The second dead-end is related to sustainability: economic profitability cannot address sustainability issues if negative externalities of agriculture are not costed and if positive externalities are not rewarded. The imperative is to move agriculture out of its unique role of producing food and feed and to bring into the discussion other roles that agriculture plays, which are related to natural resources management, preservation of landscapes and biodiversity, job creation, cultural heritage, and local development. It means that the unique objective of reaching a productive optimum (the optimization of the production function) must be replaced by multiple objectives which need to be negotiated between relevant stakeholders (at different scales).

This discussion recalls the policy debates about the multifunctionality of agriculture which were central within the OECD in the 1990s and 2000s, especially in European countries. This new policy orientation was largely derailed by

its instrumentalization in the context of WTO negotiations on agricultural liberalization (Losch, 2004), but it was pioneer in its adoption of a multi-level, multi-stakeholder, and multi-objective approach.

The Need for Strategic Thinking

In that context, it is critically important to reinvest into strategic thinking and to reengage into development strategies which have been broadly side-lined by the liberalization agenda to the benefit of sectorial approaches. A development strategy is more than the aggregation of sectorial policies. It is a process of defining priorities adapted to the characteristics of every context, based on adequate diagnoses of structural issues and current challenges shared by stakeholders, as well as on plausible future scenarios. The quality and the inclusiveness of this process are absolutely critical and require close attention. It means a necessary support during its preparation and design and, because a development strategy can be considered as a public good (Stiglitz, 1998), it must benefit from the support of governments. The discussion of options for the development of agriculture must be framed in that perspective. Agriculture is not located on an island. It is fully embedded in its natural, socio-economic and cultural environment, and its development cannot be disconnected from the specific challenges of the place.

Therefore, it is critical step to take into account the “basic arithmetic” of numbers (Headey et al., 2010): public policies must address the regional distribution of activities and people, i.e., what people do and where they live. What is the spatial distribution of the population and the importance of rural population? What are the major sectors of activity and what is the weight of agriculture in employment? These are basic questions but they are central to set the baseline of the actual structural situation of a country, and this baseline must be used to define a national strategy about the role of different sectors of activity, their outcomes and their relation to the environment.

The Need for New Evidence to Inform Decision Making

The specific role of agriculture must be supported by an adequate development model for the sector and adapted policies. The labor-capital mix is a central issue because different technical and organizational options can result in very different outcomes in terms of farm development, farm concentration and job consolidation and creation. Discussing the options for agricultural development must be based on up-to-date and adequate information. Yet, paradoxically with regards to the importance of the sector, little is known about the labor content of agriculture and more generally of the agri-food economy.

As reminded in this paper, there is a major data issue. Due to the general current orientation of agricultural statistics (particularly censuses) and to the lack of resources for data collection in many DCs, the existing and potential number of jobs is largely missing, and there is little reliable information on the labor content of different types of agricultural productions and value chains, in relation to different farming systems and types of farms.

The existing analyses on agricultural employment are mostly based on case studies and on partial data using available surveys and databases. The lack of information on labor is particularly important for farm households and is even more critical for large farm enterprises using wage labor which are rarely investigated (Burnod et al., 2019). Still, they are a major needed reference for discussion in international debates.

To answer these information gaps, new research dedicated to the labor content in agriculture and the agri-food sector is necessary. It will have to address the question of the quantity of labor (number of hours per activity to be aggregated in full-time equivalent to estimate the number of workers) according to the type of technical choices (mechanization, inputs, agricultural practices) corresponding to different agricultural models—the gradient being between conventional agriculture and agro-ecology, and also according to the type of farm organization (family farms, farm businesses, farm cooperatives, or corporate farming) and to the type of downstream enterprises (particularly small and medium size enterprises).

To move toward effective decent employment, there is also a need to investigate the quality of labor according to the foregoing choices. The main issues are returns to labor (wages, payment in kind, farm profitability, and possible additional benefits), as well as the distribution of labor according to gender and age, which determine the income earned by the different agricultural workers according to their work status (family workers and wage workers, farm household heads and farm managers). Another critical issue is the conditions of labor: hours of work per day, work equipment, access to sanitary, time for rest and vacation time for hired workers. All this information requires specific surveys and their consolidation in a dedicated program.

This research on the labor content in agriculture and the agri-food sector can directly contribute to better policy making by providing and disseminating new evidence on the sector which is critical to guide decision about types of products, techniques, and organization to be promoted for increased employment and the improvement of labor conditions.

The Need for Place-Based Approaches to Address Sustainability Issues

With regard to sustainability issues and the need to escape the domination of the modernization paradigm based on productivity and profitability, it is important to move toward negotiated objectives for agriculture. Global sustainability challenges are the result of global processes of change, but also of the accumulation of countless local sustainability issues which need to be dealt with locally. The contribution of agriculture to sustainability through new practices and the production of new goods and services implies an effective understanding of possible options for action in specific local contexts. In that perspective,

a possible fruitful way is to investigate better the potential of place-based—or territorial—approaches which are increasingly recognized as a way to better articulate policies with regard to the challenges of local contexts and, as such, to better contribute to global sustainability (AFDB et al., 2015; TP4D, 2018; OECD, 2020).

Governmental action is segmented between sectorial departments and levels of government, a situation which contributes to inefficiency due to conflicting mandates and lack of coordination. As such, it is difficult to articulate different objectives with regard to agricultural production, natural resources management, employment creation in order to address complex situations and to support sustainable local development. Because place-based approaches are founded on local participation, dialogue and collaborative governance, which facilitate commitment and create ownership between stakeholders, they can help to negotiate objectives and to identify needed roles for agriculture (Caron et al., 2017). In addition, as reminded by the city-region food system (CRFS) framework (Blay-Palmer et al., 2018), place-based approaches are adapted to food system management. They can contribute to a progressive relocalization of food systems, which is a way to better answer food and nutrition security challenges (Cistulli et al., 2014; OECD et al., 2016), to use the full potential of development of the agri-food economy with possible labor-intensive activities from the local level and along the value chains (Christiaensen et al., 2021), to limit negative externalities and reduce foot print through a closer connection of food producers and consumers (Waltz, 2011) and, finally, to reposition agriculture within societal choices.

These perspectives about better investigating agriculture and agri-food development models, their labor content, and about adopting a place-based approach are critical for strategic thinking. In countries where the basic arithmetic of numbers result in a continuing critical role for agriculture (i.e., where employment alternatives are limited for the couple of decades to come), the unique adoption of the historical modernization paradigm, which accelerates the massive exit of farmers and farm workers, cannot be an option. New evidence must contribute to identify sustainable development pathways, dealing with the natural environment and social inclusion, and supportive policies and safeguards. Such an approach will also help to answer the challenges related to work in agriculture and decent employment through more viable and sustainable agricultural systems.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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