

Achieving the Sustainable Development Goal on Poverty Eradication

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Abstract

Achieving the Sustainable Development Goal on poverty eradication requires focusing on agriculture and rural areas. Increasing technology adoption in staple food agriculture—the Green Revolution—will however not suffice. Key is to manage an agricultural and a rural transformation whereby farming systems become more diversified and a rural non-farm economy emerges to complement agricultural sources of income and smooth labor calendars for the rural labor force.

The United Nation's Sustainable Development Goal #1 (SDG1) calls for "eradicating extreme poverty for all people everywhere" by 2030. For this, extreme poverty is defined as people living on less than \$1.90 a day measured in 2011 Purchasing Power Parity-adjusted dollars. In 2013, the corresponding world poverty rate was 10.7%, and the number of extreme poor 767 million. Clearly "eradication" is rhetorical, but an accepted meaningful objective would be to bring the poverty rate down to say 1%, taking some 700 million people out of poverty by 2030. How can this be done?

Who are the SDG1 poor? Country-level analysis

An assessment of how this can be done starts with a diagnostic of who are today's extreme poor, where do they live, and what do they do. Regarding where they live, the situation has changed markedly relative to what it was under the Millennium Development Goals (MDGs). In 1990, at the onset of the MDG period, 47% of the world extreme poor lived in East Asia and the Pacific, especially in China with 660 million extra poor out of a total for the region of 877 million. By 2013, only 9% were left in East Asia and the Pacific. Poverty has been displaced to Sub-Saharan Africa with 51% of the extreme poor (up from 18% in 1990) and to South Asia with 33% (up from 29%). Together, these two regions account for 84% of the world's extreme poor. With current world population growth dominated by Sub-Saharan Africa, it is especially there that the SDG1 battle will have to be fought.

The other major change in the nature of poverty is the kind of country where poor people are located. The World Bank classifies countries by their per capita income level as Low Income, Lower Middle Income, and Upper Middle Income. In 1993, 93% of the extreme poor were in Low Income countries. By 2013, 66% were in Middle Income countries, especially in Lower Middle Income countries (57%). This includes large countries such as India, Pakistan, Nigeria, and Indonesia. The reason why this happened is that 30 Low Income countries achieved middle income status over the MDG period, and these 30 countries included 2/3 of the world poor. Today only 34% of the world extreme poor are left in Low Income countries.

A further important aspect of national context is the concept of fragile state, countries with particularly weak state capacity. 30% of the world's extreme poor are located in 44 fragile-state countries. Of these 44 countries, 26 are Low Income and 18 Lower Middle Income countries.

This breakdown in Low Income vs. Middle Income countries and fragile-state vs. state-capable countries gives us a useful dichotomy for the location of extreme poverty to be addressed by SDG1:

Poor in "hard places": 34% of the world extreme poor are located in Low Income countries where per capita income has, as of yet, failed to grow sufficiently to achieve Middle Income status. This can be due to slow economic growth, rapid population growth, or both. Another 12% are in fragile non-Low Income countries. Altogether, 46% of the world extreme poor are located in what can be qualified as "hard places", countries where growth is hard to achieve and/or where state

capacity is deficient. Support to poverty reduction for this population will have to depend importantly on international resource transfers. New aid modalities are needed to reach them since allocation on the basis of World Bank's Country Policy and Institutional Assessment scores (that evaluates a country's quality of institutions and policies) generally excludes them. This includes channeling aid through institutions such as Non-Governmental Organizations, philanthropic institutions, social funds, and local forms of governance that can perform in spite of low national state capacity.

Poor in state-capable Middle Income countries: 54% of the world extreme poor are now located in non-fragile Middle Income countries. For them, poverty reduction does not depend on international resource transfers as they are located in countries with the fiscal capacity to address poverty and frequently their own foreign aid programs. Poverty reduction in these countries is more an issue of sustaining GDP growth and of making growth into an effective poverty reducing instrument. It also depends on the ability to deliver and target social programs that complement what growth cannot do to reduce poverty. With a large fraction of their population just above the poverty line, reducing vulnerability to shocks that can push them back into poverty is essential. Yet, effective non-contributory programs to reduce vulnerability are rare and more difficult to put into place than anti-poverty programs. Assistance to these countries for poverty reduction is thus more in the nature of policy advice, rather than resource transfer, with advice focused on growth, quality of growth, and the delivery of social protection and social assistance.

While there is a continuum between poor in hard places and poor in State-capable Middle Income countries, these two groups of poor, of largely comparable sizes (46% and 54%), call on the use of policy instruments that clearly need to be differentiated.

Who are the SDG1 poor? Household-level analysis

Using household survey data to characterize who are today's extreme poor in terms of what they do shows a stunning fact: they are largely unchanged relative to what they were under the MDGs, namely principally rural and dependent on agriculture (LSMS-ISA, 2016). In Tanzania, the share of poor that are rural only changed from 95% to 93% between 2005 and 2015. In Senegal, over the same period, this percentage changed from 88% to 82%. In India, between 1988 and 2012, there was an 80% decline in the urban poverty rate, but only a 15% decline in the rural poverty rate. These rural poor depend mainly on agriculture for their livelihoods. Of the world stock of nearly 800 million extreme poor, an estimated 80% live in rural areas (640 million) and 81% of them work in agriculture (518 million). For many of them, with continued high population growth and limited rural-urban migration opportunities, access to land has been declining on a per capita basis. In India, between 1988 and 2012, access to land for the poor declined from 2.3 acres to 1.2. Access to land for the non-poor also declined, from 3.8 acres to 1.8, suggesting that increasing off-farm sources of income are important in avoiding poverty. In Senegal, access to land declined for all deciles of the distribution of income, and in Tanzania for all deciles except the richest group. A

large deficit in health and education services also contributes to keeping many of these poor trapped in agriculture. Hence, rural poverty remains the unchanged and dominant face of poverty (82% of the poor in Sub-Saharan Africa), in spite of urbanization, and their dependence on work in agriculture remains overwhelming (75% of the poor in Sub-Saharan Africa), in spite of an on-going structural transformation of the economy away from agriculture, sources of growth increasingly derived from mining exports, and displacement of the population toward “consumption cities” where expenditure is importantly driven by rents from the mining sector (Jedwab, 2013).

Attacking SDG1 poverty: In or out of agriculture and rural areas?

Observing that the poor are rural and agricultural does not mean that the solution to poverty necessarily has to be found in rural areas and through agriculture. It could be that there is selection in poverty, and that those who became non-poor under the MDGs are precisely the ones who selected out of the rural-agriculture condition into either the urban environment or access to non-agricultural sources of income in the rural setting. This has generated a huge controversy as to how to attack poverty, including to meet the SDG1. Collier (2008), Dercon (Collier and Dercon, 2014), and Gollin (Dercon and Gollin, 2014) have all argued that moving out of the rural-agriculture condition is the strategy out of poverty. Labor productivity is much higher in non-agriculture and the urban environment. Smallholder farming would then be a poverty trap, not a potential solution to poverty. Others such as Byerlee and Haggblade (2013), and ourselves (World Bank, 2007) have argued that productivity growth in smallholder farming and employment in rural non-farm activities linked to agriculture offer the best opportunities for poverty reduction. The debate is of course empirical. For Uganda, Christiaensen and Kaminski (2015) show that 70% of the observed decline in the poverty rate between 2005 and 2009 was achieved within agriculture, and only 35% through the agriculture-non-agriculture occupational change (poverty increased in the non-agriculture-agriculture occupational change). The poverty rate did not decline in the urban environment. By contrast, 66% of income growth was due to the non-agricultural sector, compared to 18% due to agriculture. Agriculture is thus good for poverty reduction, while the urban environment is good for aggregate growth. In Tanzania, over the period 1992 to 2010, 34% of poverty reduction was achieved through employment in agriculture, and 55% through employment in rural non-farm and local town activities, with only 11% achieved in cities. On a cross-country basis, Ligon and Sadoulet (2016) have shown that GDP per capita growth originating in agriculture is two to three times more effective at raising the income of the poor than the same growth originating in manufacturing and services.

We thus conclude that continued location of the poor in rural and agricultural settings is not principally due to selection into poverty, but that there is genuine potential to reduce poverty using both agriculture and the rural non-farm economy as instruments. In support of this, it can be said that (1) the economic conditions for investment in agriculture are currently relatively favorable, with expanding demand on domestic and international markets, (2) the existing large yield gaps relative to potential due to low technology adoption and under-investment in public

goods offer significant opportunities for rapid gains, (3) national agricultural policies such as the Comprehensive Africa Agriculture Development Program in Sub-Saharan Africa and the National Food Security Mission in India offer supportive environments for investment in agriculture, and (4) there are clear signs of progress in Sub-Saharan Africa agriculture, with increasing localized adoption of modern technology by smallholder farmers (Christiaensen, 2017). The main two policies instruments for SGD1 initiatives are thus the modernization of agriculture, what we call the Agricultural Transformation, and the diversification of sources of income in rural areas, what we call the Rural Transformation. Both Agricultural and Rural Transformations must be inclusive and sustainable to deliver the expected poverty reduction results, for which both the quality of growth and the complementary role of social programs are essential. This rather than merely focusing on the Structural Transformation whereby resources are transferred out of agriculture and rural areas for industrialization in the urban environment, as the classical theories of growth in the dual economy have for long prognosticated.

How to use the Agricultural Transformation for SDG1?

The Agricultural Transformation starts from an agricultural sector basically focused on the production of staple foods for home and local consumption, and ends with a sector that is strongly market-oriented and produces a wide variety of products, including high-value cash crops delivered to agro-industries, supermarkets, and agro-exporters (IFAD, 2016). It basically occurs in two steps. The first is the modernization of agriculture that requires productivity gains in the production of staple foods. This is the Green Revolution that has been so successful in irrigated areas of the developing world but has failed to happen in rain-fed areas such as Eastern India and the majority of SSA where only 7% of the land is irrigated. It largely occurs through the adoption of improved agricultural technology, by removing the constraints to adoption. According to results from field experiments run under the Agricultural Technology Adoption Initiative (ATAI, 2016), this occurs through securing property rights over land to induce investment, improving infrastructure for access to water and markets, making financial institutions accessible to the poor for credit and insurance, fixing extension services to inform farmers and help them decide, and engaging in policy reforms to reduce price distortions and excessive taxation on agriculture. Adoption principally concerns high yielding and climate resilient seed varieties, delivered in particular by the Consultative Group on International Agricultural Research as international public goods, and chemical fertilizers. An example is adoption of flood tolerant rice varieties in Eastern India, leading to both greater resilience of yields to shocks in bad years, and more investment in agriculture every year as risk of crop loss is reduced.

The second phase is the diversification of agricultural systems with an increasing share of high value crops and the development of integrated value chains. High value products include non-cereal crops, especially vegetables and fruits, and livestock products such as meat and milk. On small farms, these activities are typically intensive in labor and favorable to the employment of women. Development of value chains leads to the emergence of private providers of services,

agro-dealers, and the development of seed systems. Relations in value chains importantly consist in contracts between producer groups and commercial partners such as agroindustry and supermarkets. These “productive alliances” have been successfully developed in Latin America, and are starting to emerge in Sub-Saharan Africa, for instance for green beans produced in Kenya and Senegal for export to the European markets.

The Green Revolution is thus only the initial step of an Agricultural Transformation. It will be successful for SDG1 if it leads to an Agricultural Transformation that is inclusive of the rural poor and sustainable in its use of natural resources. There are risks, however, especially because a successful Agricultural Transformation can be at the cost of exclusion of smallholder farmers. Supermarkets may prefer to contract with large producers or to rely on imported foods. Agroindustry may find it easier to integrate vertically rather than to subcontract with smallholder farmers (as observed in Senegal). In this case, it is only through the labor market that benefits may be extended to the rural poor, a clearly inferior solution to their participation as entrepreneurs (Maertens and Swinnen, 2009).

How to use the Rural Transformation for SDG1?

If a lot of rural poverty reduction can happen through the modernization and diversification of agriculture, a strong contributor, as we have seen, is through the diversification of rural incomes beyond agriculture toward activities in the local rural non-farm economy. This is the Rural Transformation. It also typically proceeds in two steps. The first consists in the emergence of a multitude of small and medium enterprises located in rural areas. These enterprises are linked to agriculture through forward linkages, adding value to agricultural production with processing into more elaborated products, or simply through marketing activities making commodities available at other times and places. They are also linked through backward linkages, delivering inputs, equipment, and services to agriculture such as tube-wells, simple machinery, and financial products. And they are linked through final demand linkages, where agricultural incomes generate demand for a whole range of non-tradable industrial products and services. This is what Adelman (1994) called Agricultural Demand-Led Industrialization. Today, most of the demand may be for services as industrial goods have become increasingly tradable, inducing an Agricultural Demand-Led Services transformation. These activities create self-employment opportunities for entrepreneurs, but much more importantly wage employment opportunities (rural non-farm employment) for the large majority of others, especially as medium enterprises start to emerge. Rural households can increasingly diversify their sources of income, combining farming (self-employment and wage employment in agriculture) and part-time non-farming employment. This allows them to smooth their labor calendars in spite of highly seasonal employment in agriculture, raising annual labor productivity. The diversification of sources of income is fundamental for the competitiveness and survival of the family farm. Surveys of sources of income among smallholder farmers reveal that 30-40% in Sub-Saharan Africa to 50% in South Asia and 60% in Latin America and South East Asia of total household income is typically derived from the rural non-farm

economy. Rural non-farm employment is mainly local, but sometimes requires seasonal migration to distant labor markets. Hence, even a village economy with little local rural non-farm economic activity can be deceptive of the sources of income for the local population. Households with diversified sources of income have been referred to as “pluriactive” and, as shown by the Food and Agriculture Organization and the World Bank, they dominate the landscape in rural villages. This is a fundamental observation for success with SDG1. It is unlikely that the Agricultural Transformation—the modernization and diversification of agriculture—will alone suffice to take the rural poor out of poverty. Essential is success with a Rural Transformation that brings access to income opportunities in the rural non-farm economy to farm households and smoothens their labor calendars.

The second phase is one where diversification of sources of income increasingly leads to individual specialization in on-farm and non-farm jobs. Labor may migrate to local towns as rural urbanization proceeds. Land markets are important in permitting these labor movements as land is rented out or sold by those who specialize in the rural non-farm economy. Mechanization allows land consolidation into larger farms with significant gains in labor productivity and poverty reduction. A key issue here is the pacing of land consolidation and mechanization with labor absorption in the rural non-farm economy and through rural-urban migration. There is nothing that guarantees that consolidation and mechanization do not run ahead of productive labor absorption, requiring close monitoring by a coordinating public entity that may oversee the pace of this Rural Transformation to secure its inclusiveness. As Christiaensen and Todo (2014) have shown, development of the rural non-farm economy in secondary towns tends to be more effective for poverty reduction than concentration of these same enterprises in larger cities. A territorial approach to the Rural Transformation can thus be most effective in constructing the institutions of governance and the civil society organizations needed to accompany the process toward not only accelerated growth but also widespread inclusion and sustained poverty reduction.

Context and transformations

We characterized the context where the extreme poor for the SDG1 are located as either Hard Places or State-capable Middle Income countries, with a continuum between the two. Because the poor are predominantly rural and dependent (directly or indirectly) on agriculture, and because this is not a selection outcome with successful escapes from poverty occurring by moving out of agriculture and rural areas, inclusive and sustainable Agricultural and Rural Transformations are the main two instruments for SDG1 action. Structural Transformation may be the main instrument for growth, but Agricultural and Rural Transformations are the main instruments for poverty reduction through income generating opportunities. We have defined the Agricultural and Rural Transformations and identified some of the major steps involved in these transformations. These steps in turn suggest policy instruments. However, policy instruments are conditional on context. This creates at the simplest a two by two typology that places the instruments for the Agricultural and Rural Transformations within the corresponding contexts of poor in Hard Places and poor in

State-capable Middle Income countries. We have seen that policy instruments in Hard Places would privilege resource transfers coming from foreign aid and the Non-Governmental Organization sector. Policy instruments in State-capable Middle Income countries are by contrast policy-led, with an important role for local governance and a territorial approach.

The Agricultural Transformation in hard places focuses on the supply side of agricultural technology for staple foods, and on removing the constraints on adoption. This is the hardcore of the Agricultural Technology Adoption Initiative for rain-fed areas. Because value chains are not developed, information to farmers has to come from public extension and Non-Governmental Organizations. In State-capable Middle Income countries, the Agricultural Transformation relies more on investment in Research and Development and the development of value chains where private agents can play active roles in the provision of information and the delivery of new technologies.

The Rural Transformation in hard places is very locally confined by weak governance and high transaction costs in accessing markets. It focuses on the emergence of local enterprises through subsidies and direct assistance to entrepreneurship, typically helped by Non-Governmental Organizations. Local markets for non-tradable goods emerge, unleashing rural transformations based on Agricultural Demand-Led Industrialization and Services. It is only in State-capable Middle Income countries that the transformation can go further, with the development of land and labor markets, and concentration of the land in larger farms with mechanization. Local governance is important to coordinate this transformation, with the formation of clusters of economic activity and pacing of the transformation so it remains inclusive. Civil society organizations are essential representative instruments to keep governments accountable in coordinating the process on behalf of inclusiveness and sustainability.

Conclusion

The extreme poor for the SDG1 are not the same as they were for the MDG1, even though they may look alike in what they do. The context has been changing and so are the instruments that can be used to succeed in meeting the SDG1. In all cases, agriculture and rural development remain key. Adapted to the corresponding context, the concepts of inclusive and sustainable Agricultural and Rural Transformations are useful in defining policy strategies and program initiatives. They are increasingly being used by development agencies such as the Food and Agriculture Organization, the International Fund for Agricultural Development, the International Food Policy Research Institute, the Agriculture and Rural Development division of the World Bank, the Inter-American Development Bank, and the Bill and Melinda Gates Foundation. This vision of a “new rurality”—a rurality with not only staple foods but also an agricultural and a rural transformation—offers a different and promising way of using agricultural and rural development as an instrument for the eradication of world extreme poverty.

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