

Committee on World Food Security

High Level Panel of Experts on Food Security and Nutrition

**Investing in smallholder agriculture
for food and nutrition security**

V0 DRAFT

A zero-draft consultation paper

December 20th, 2012

Submitted by the HLPE to open electronic consultation

This V0 draft has been produced by the HLPE Project Team under guidance and oversight of the HLPE Steering Committee.

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This V0 draft is put online by the HLPE as part of the its report elaboration process, for public and expert feedback and comments

from 20 December 2012 until 18 January 2013

To get the link to the consultation: www.fao.org/cfs/cfs-hlpe

This consultation will be used by the HLPE Project Team to further elaborate the report, which will then be submitted to external expert review, before finalization by the Project Team under Steering Committee guidance and oversight.

According to the provisions of the Rules and Procedures for the work of the HLPE, prior to its publication, the final report is to be approved by the HLPE Steering Committee. This is expected to take place at the 7th meeting of the HLPE Steering Committee (May 2013).

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FOREWORD

SUMMARY AND RECOMMENDATIONS¹

The state of smallholder agriculture in relation to investments

The importance of smallholder agriculture

1. A **smallholding** is run by a family that derives a substantial and indispensable part, or all, of its income and/or food from agriculture. The family is often engaged in non-agricultural activities as well. Smallholders actively try to improve their livelihood through the development of their **resource base**. This resource base is **small** in as far as it is not, or hardly, sufficient to render an acceptable livelihood. That is why we talk about smallholders. The same feature explains why smallholders continue to strive for a further development of their resource base and to enlarge and develop agricultural production.
2. **The family structure supports both sides of the reality of smallholders: the economic and the domestic** sides are closely linked. These **structural linkages** explain **part of the constraints** faced by smallholders regarding investments; they also explain **the resilience capacities** of the rural societies with a significant component of non monetary exchanges. These two components co exist in variable proportions and instead of being exclusive mechanisms, they deeply interact and support each other.
3. The same combination is valid at collective level where families are part of kinship and social networks where **self help groups or groups formed around specific social activities** that require collective action to invest in. But they also engage massively - when political freedom allows it - into **rural producers' organizations or local development associations** of various forms in order to improve service provisions and to have a voice in public policies debates as well as increase the bargaining powers either in society or markets.
4. For the sake of convenience smallholders often are identified with statistical categories (as e.g. having less than 2 hectares of agricultural land). As imperfect as such categories are, they show that there are **hundreds of millions of smallholdings** in the world and the number of members of smallholder families tends towards 2 billion. Equally important here is to recognize that smallholder agriculture is not limited to the South. It is equally omnipresent in the North.
5. **Smallholders are not located outside the markets**. Talking about 'inclusion' as remedy for the many problems smallholder agriculture is facing, reflects a wrong diagnosis. Smallholders are already included, but in biased and distorted ways. The many markets in which smallholders operate very often are far from being a level playing field. Lack of access, high transaction costs, unequal treatment and an unequal distribution of risks are some of the consequences that smallholders suffer.
6. When market conditions are favorable smallholders **respond positively**, they innovate, organize joint market channels, engage in processing agricultural products and gain market power. When, however, markets are imperfect and total value added is distributed in a skewed way, smallholder agriculture will suffer a range of negative consequences that in the end may even cause a de-activation of agricultural production.

¹ Note: The current V0 draft contains a short summary and, intentionally, very first tentative recommendations : these are to be seen NOT as the final recommendations of the HLPE, but as a work-in-progress, part of the process of their elaboration: it is therefore to be seen as a *scientific and evidence-based invitation* for their enrichment, for being screened against evidence, as well as for further suggestions on their operationalization and targeting.

7. Smallholder agriculture is the **largest provider of food** and raw materials at world level. Smallholder agriculture is productive and represents resilience when it comes to shocks of whatever type. Smallholder agriculture is also the largest provider of jobs in the world and it plays an indispensable role in the emancipation of marginalized social groups. Smallholders are able to maintain natural resources and improve the environment if favorable conditions are met.

Smallholders and investments

8. Most **investments in smallholder agriculture are realized by smallholders themselves**. This occurs through different modalities: labor investments that aim to enlarge and improve the resource base, savings and remittances that are used for the acquisition of new, additional resources, etc.
9. **But the main constraints** that smallholders face regarding investment in agriculture can be reflected in
- the poverty situation** that press on domestic and productive budgets limiting thus the level of investments to develop the holding assets that in turn reflect in low labor productivity – this often turns into poverty traps;
 - the high level of risks** resulting from the combination of natural, technical exposure (climatic risks and shocks – climate change, pests and diseases on animal and crops,...) and economical risks, among which market failures or missing markets tend to reduce investments behaviors;
 - the environment** has not provided the adequate incentives: scarcity of financial services for smallholders to invest with long term perspective in good conditions (low interest rates, insurance...), weakness of research and development targeted to specific needs of smallholders (low cost innovation, high intensive knowledge innovation for sustainable agriculture...); lack of coordinated approaches between extension and finance;
 - institutional weakness** of smallholders' collective organizations meaning lack of social and political recognition at individual level as a "farmer" or "family farmer"... This lacking status results in a kind of social "invisibility" and weak voice in policy dialog with little or no weight in policy formulation.
10. Three dimensions are crucial here to define specific types of situations where investments can either be **stimulated** or be **discouraged** or even completely blocked.
- The first is the resource-endowment of the smallholding which is not immutable.** If **secure access to resources** exists with adequate incentives and institutional settings that allow increasing the productivity of smallholder family labor, the smallholder family might realize acceptable incomes that enable further investments.

On the contrary if the resource base is small and access to adequate resources is lacking, it will be hard to invest. The resource base regarding access to land might be inadequate due mainly to unequal repartition of assets: then agrarian reform has to be among the options, with adequate support beyond land asset.
 - The second dimension regards the markets and market-agencies.** If relatively favorable conditions reign (reduced volatility), investments will be stimulated, if not they might be discouraged or even become impossible.

- c. **The third dimension regards the institutional and policy design.** To ensure adequate access to resources by smallholders and ensure a well functioning markets and market-agencies that can benefit smallholder agriculture, good policy design must be in place to facilitate the process. At the same time, there need to be innovative institutional settings to create an enabling environment.
11. Depending on time and space, the three discussed dimensions may articulate towards smallholders as a favorable climate for investments. They may also frame a complex set of **constraints** that hinder or block investments by smallholders.

Smallholder agriculture: the way ahead

12. At global level, smallholder agriculture contributes in a massive, indispensable and strategic way to food and nutrition security. Beyond this there is considerable potential to further enlarge this contribution. This contribution is multidimensional. The economic dimension regards actual and potential production capacity. The social dimension associates with poverty alleviation and reduction of social and spatial inequalities. The environmental dimension embraces issues as biodiversity, deforestation, climate change mitigation and water conservation. The political dimension includes the emancipation of neglected groups in society. On all these dimensions smallholder agriculture can further enlarge its contribution to societies, and it is very urgent to do so.
13. Depending on national situations linked to history of development pathways, smallholder agriculture is not the only way of organizing agriculture and these different ways have to be considered. In reality, they occupy space together with other types of farming organizations [large scale farming, corporations, agro-industries...], they may develop positive linkages, they may, sometimes, compete for resources of all kinds (natural resources but also policies).
14. However, the actual and potential contributions of smallholders are generally poorly understood and they have been too frequently neglected in policy and public investment. Hence, there is an urgent **need** for greater attention to investment in smallholder agriculture.
15. Given the current and projected context of high food prices, concerns with improved food security, demands for social protection, and concerns with environmental degradation, there are opportunities to more successfully invest public resources in smallholder farming, thus supporting the investments by smallholders themselves in their sources of livelihood. Hence, there is an as yet unused **opportunity** to invest in smallholder for development (growth, poverty reduction and food security improvement, basic needs, and environmental services and sustainability)
16. Investing in smallholder is a complex proposition as it requires a **coordinated strategy** across sectors, time, and space. As a consequence, it requires development of a national smallholder development program that is country specific, comprehensive, and broadly owned.
17. Implementation of this program needs **political support**. The most effective source of support are the smallholder stakeholders themselves. Because they are typically under-represented in national political platforms, enhanced representation is an important contribution to success.

Recommendations

Recommendation framework

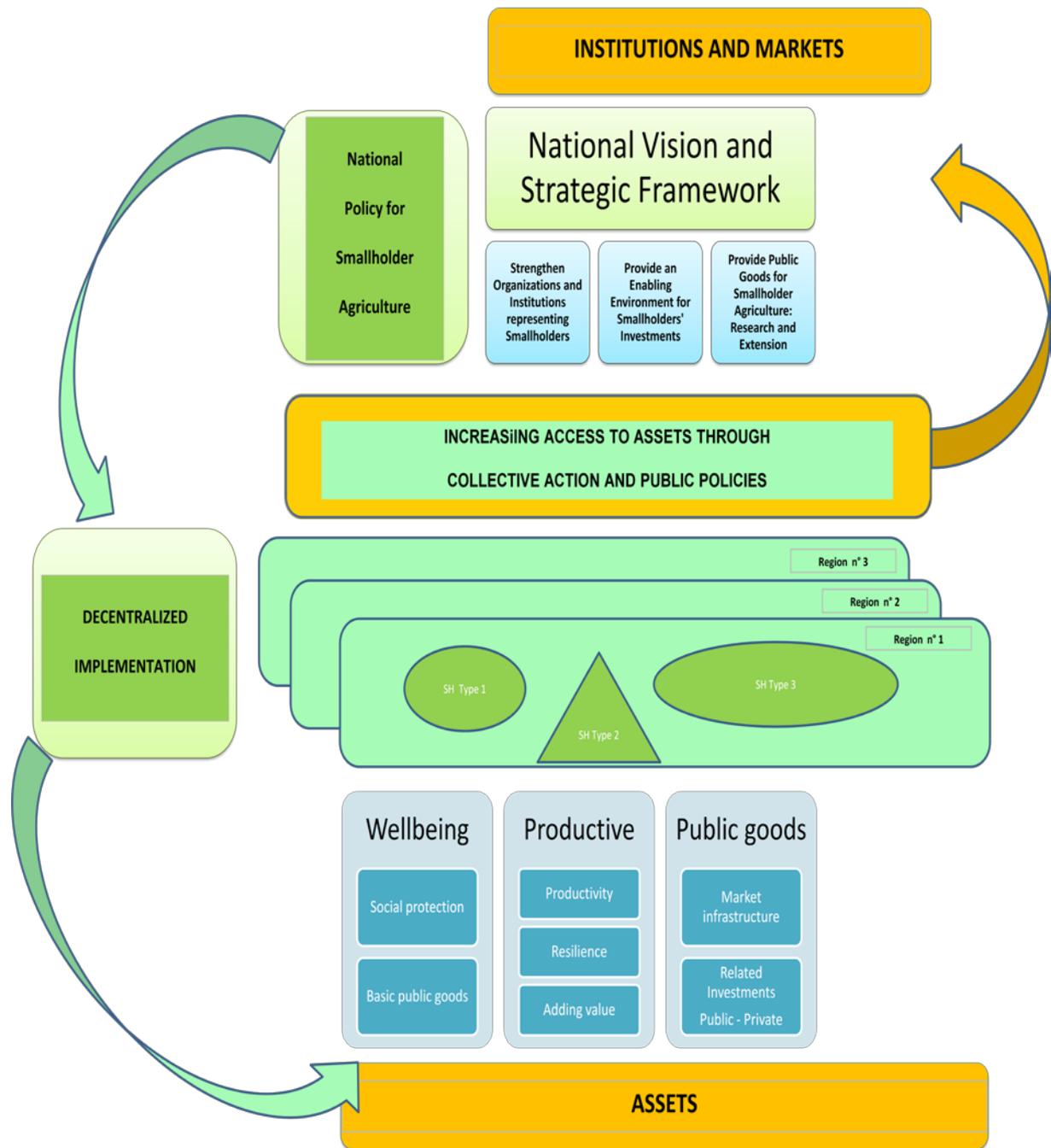
18. At the national level, a **National Smallholder Vision and Strategic Framework** is to be elaborated that is country specific, comprehensive, and broadly owned. Smallholders and their

organizations are to have an important role and voice in the elaboration of such a program. The program proposes how to tackle the specific constraints that smallholder agriculture is suffering.

19. The National Vision and Strategic Framework has to consider **the different ways agriculture is structured and the different types of holdings** ranging from smallholder agriculture to more structured and consolidated family farming structures up to corporations and agro-industries. This may result in bimodal structure like in countries like Brazil, or in unimodal type like Viet-Nam or Mali for instance. Even, in case of a unimodal structure type, **diversity is to be accounted for**, since smallholder agriculture present a high level of heterogeneity.
20. The recommendations are framed around **the typology** designed to represent the diversity of conditions that constraint smallholder agriculture: **Assets, Markets and Institutions**. Our recommendations follow these lines according to adequate geographical and institutional level:
 - **“Institutions and Markets” at national level** and,
 - **“Assets” at territorial levels**.
21. In this design we consider that assets provision has to be materialized at territorial level, where production and market are functioning but the way they operate depends on collective assets – often intangible ones – that are decided outside the territory. These intangible assets will depend on the capacity of both the State and representative of rural producers’ organizations to shape positive incentives to favor investment by smallholders.
22. **Implementation makes sense and has to be implemented at territorial level**. This allows for a pragmatic recognition of the diversity of natural endowments, infrastructures, institutions and forms of collective action. The territorial approach also allows for degrees of self-regulation wherever this is desirable.
23. **The national policy structures the “Institutions and Markets” component** which content arises from a national vision for smallholder agriculture, far beyond the sole agricultural sector [Health Education Social Affairs...] whose production builds on a wide negotiation between the different State departments and Civil Society Organizations resulting in a strong ownership.
24. The outcome of the process is a National Vision for Smallholder Agriculture and the corresponding Strategic Framework.
25. It is trivial to say this **National Vision and Strategic Framework for Smallholder Agriculture** will present specific characteristics depending on both the national economic and social trajectories and the quality of the consultation process within the society as a whole [not limited to agricultural stakeholders, including consumers, urban and social organizations].
26. Beyond the national specificities, the National Vision and Strategic Framework for Smallholder Agriculture will rely on three pillars closely articulated:
 - **Strengthening the institutional structure of the smallholders at collective levels**. This includes:
 - **Social, legal and political recognition** for smallholders as a business and social sector of the society opening rights and duties, both for individuals and their organizations
 - **Strengthening collective capacities** of the various organizations that represent smallholders at various levels, from local to national

- **Recognition and enforcement of rights regarding existing rights on land and resources** and when necessary providing **secure access to land and natural resources** through redistributive mechanisms
 - **Ensuring an enabling environment and adequate incentives** to promote investment in smallholder agriculture and by smallholders themselves at holding level. Specific priority to be given at:
 - **Banking and financing system** to support smallholder agriculture
 - **Policy investment code** in agriculture organized around the recognition of **the inalienable right to farm for smallholders**
 - **Markets regulation mechanisms** to promote price stability, reduce market risks and enforce regulatory mechanisms between agro industries, global value chains corporations and modern retail chains
 - **Provision of public goods in research and extension** targeting the specific constraints of smallholder agriculture and hence providing the ways and means to locally increase the capacities of smallholder agriculture.
27. **The territorial policies structure the Assets component** deriving from a geographical and decentralized declination of the National Vision and Strategic Framework.
28. The implementation is based on a bunch of targeted actions in three coordinated domains at territorial level. “Targeted” means recognition of the heterogeneous nature of the smallholder sector showing diverse support needs from the most vulnerable to the more “well off”. The actions aim at strengthening the assets at holding and territorial level, the latter being considered as a catalyst to enhance investment by smallholders.
29. **The three coordinated pillars are:**
- **Social protection and basic public goods** for the well being of the smallholders’ families
 - **Technical and organizational proposals** to:
 - Increase in productivity and resilience
 - Add value to the local products through small and medium scale processing plants and targeting new urban needs
 - Strengthen the collective action processes to support smallholder technical innovation and increase market power
 - **Market infrastructure and related equipments** including private investment under close supervision of the policy investment code and provision of public or private – public goods provision to improve market access for smallholders.
30. **The profile of the three pillars** will vary accordingly to the diversity of the situations encountered by smallholder agriculture between and within regions.

Figure 1: Recommendation scheme



Comments:

The orange arrow on the right side represents collective action needed to support policy making targeted to smallholder agriculture

The green arrows represent the policy outcomes targeted to address the diversity of smallholders through decentralized implementation of integrated policy measures to increase access to assets for smallholders.

Specific recommendations

To really efficient, specific proposals have to be part of a comprehensive vision and adapted to the diversity of natural endowments and socio-political conditions. For instance, social safety nets alone will not make the difference, but their absence can.

31. Improving the **well-being** of smallholders (especially women and children) is a crucial prerequisite for investments in smallholder agriculture. Here public investments and the role of NGOs are crucial. Public health, provision of basic public goods (as safe drinking water, sanitation and electricity, education,..), collective goods such as school food provision through specific smallholders' oriented procurements, as well as social protection schemes including cash transfers, insurances and retirement schemes can indirectly have an important effect on investments, by improving the everyday wellbeing and hence keeping the family in good health.
32. The further improvement of **productivity and resilience** remains to be of utmost importance. Here it is strategic that agricultural research and technology development are far more oriented at the real situation (and the possibilities and limitations it entails) of smallholders. It also requires strengthened and adapted extension services. Access to inputs has to be facilitated when necessary while avoiding excessive external dependency. Policies and tools are needed to monitor, prevent and manage technical risks (climatic, plant pests and animal diseases). Far more attention is to be given to transport facilities that fit in the smallholder situation, as well as to processing technologies that might be connected to, or integrated in, smallholder agriculture.
33. There is an urgent need to reconnect the **financial and banking systems** to smallholder agriculture. Novel solutions are needed that reduce financial risks, allow for risk-sharing, and entail low transaction costs. To sustain such novel solutions requires new partnerships between the state, banks and local smallholder communities. Mechanisms of risk sharing that currently characterize particular forms of informal credit, should be used in formal credit schemes as well.
34. **Traditional markets** are to be strengthened, both in term of physical infrastructures, regulatory space and institutional agreements. Many novel forms have been developed in practice. Wherever possible, policies should build on these promising experiences. In contract agriculture, governance is to be improved in order to secure well-equilibrated relations that allow participating smallholders a fair share on both the short and the long run. Institutions that currently govern the retail markets are to contribute to more sustainability and public health. Hence they are invited to rethink, within this context, their relations with smallholders.
35. Aside from tradition and modern markets, **"new" markets are gaining audience in developed and developing countries that offer perspectives for smallholder agriculture:** procurement scheme for collective provision of meals outside the household (school and collective restaurants) that can be supported by social targeted programs. The same applies to direct procurement schemes linking directly producers and consumers involving collective action on both sides and an involvement of local and national public authorities to promote holistic and inclusive frameworks.
36. **Contract agriculture** offers opportunities for a growing number of smallholders in dozens of developing countries, but at the same time, only a very small proportion of smallholders ever have the possibility to participate in contract arrangements. Contract itself is a minor part of the scheme that can only work efficiently toward inclusiveness if investments are targeted to facilitate the access of a greater number of smallholders to this type of markets. They include:
(a) enhancing the resource base of smallholders with targeted investments in the types of

access looked for by buyers (e.g. irrigation, good rural roads); (b) establishing third party technical assistance services and certification schemes; (c) supporting the development of efficient producers' organizations as trusted business partners to overcome the limits of being small (d) engaging private corporation in providing the needed technical assistance to upgrade skills and know-how of smallholders, individually and collectively; (e) enhancing access to relevant assets by smallholders themselves under favorable incentives environment. .

37. **Modern retail systems** are acquiring a growing and sometimes dominant position in national agrifood markets. The evidence so far is that vast numbers of smallholders are excluded from participating in these markets in the developing world, and are squeezed under unfair conditions even for the strongest producers' organizations in developed countries. These markets are huge and therefore cannot be ignored. They can only work toward inclusiveness if regulations and enforcements means are effectively in place. Regulations include ensuring access to technology, finance, risk insurance and market regulations. The way to improve the environment for smallholders in these modern retail markets is a combination of the types of investments highlighted in the previous two sections on traditional markets and on contract agriculture. This is so because very few smallholders gain access to modern retailers directly, but rather through the intermediation of dedicated and specialized wholesalers or of specialized intermediaries, where producers' organizations can play a role, if progressive and needed investments are done.
38. **Strengthening of democratic smallholder organizations**, at local, regional, national and international level remains essential. At the same time forums are to be created where the voice of smallholders can be heard so as to contribute to policy formulation at different levels.
39. **When it comes to documenting issues regarding smallholder agriculture**, there is a crucial need for the international community - and CFS could provide adequate guidance in that respect – to upgrade the level of information available: the sole issue of defining smallholders - regardless of how the policy makers and CSO will use it - and just "counting" and giving an accurate picture of the structural characteristics of this social and business heterogeneous sector should receive the highest priority. Without the adequate knowledge base, how to adequately design and target policies for efficient use of public and private resources? No doubt that the Global Strategy for Improving Agricultural and Rural Statistics and FAO Statistics expertise have a key role to play in ongoing and future intellectual investments.

INTRODUCTION

This report is the outcome of a request of the Committee on World Food Security (CFS) to the High Level Panel of Experts on Food Security and Nutrition (HLPE) to undertake a study on “*constraints to smallholder investment in agriculture in different contexts with policy options for addressing these constraints, taking into consideration the work done on this topic by IFAD, and by FAO in the context of COAG, and the work of other key partners. This should include a comparative assessment of strategies for linking smallholders to food value chains in national and regional markets and what can be learned from different experiences, as well as an assessment of the impacts on smallholders of public-private as well as farmer cooperative-private and private-private partnerships*”. This was to be done for different contexts and should result in an array of policy options for addressing these constraints, given the overall objective of global food and nutrition security.

CFS requested to focus this report on market linkages, which represent a major and global concern for the majority of smallholders. This orientation is justified for two main reasons. First, the exclusive subsistence farmer type is a fictitious model without any empirical substance. All smallholders have cash needs and hence are – more or less – fully part of the market economy. As any urban inhabitant, smallholders need cash to cover at least family basic needs. Second, the relative advantages of large scale agriculture resulting from foreign or national investors compared to those of smallholder agriculture are being re-discussed nearly everywhere. This debate also relates to the “contract farming” question.

The issue of the constraints to investments in smallholder agriculture is strategic for the CFS and for world food security.

First, smallholders represent the vast majority of farmers all over the world. Most of the world food is produced by smallholders [IFAD, 2010], they are also the first jobs providers. They are the first to contribute to world food security and are also the first food insecure [through insufficient self provision, lack of access because of limited income and with inadequate quality through disequilibria in diets showing not enough diversity].

Second, the majority of smallholders live in poverty. Income generation, employment and redressing smallholders’ persistent poverty is of highest priority, for themselves, for food security but also for wider economic development and the volume of the internal market economies.

Agriculture suffered from long term under investment: a higher level of investments is needed for agricultural development and to ensure world food security [World Bank, 2007], in an historical context where even agriculture based countries are affected by three decades of reduced investments [FAO, 2012]. The recent Report on the State of Food and Agriculture (SOFA) confirms the poor level of capital in hands of smallholders in low and middle income countries and its depreciation in Sub-Saharan Africa during the period 1980-2007 [FAO, 2012].

The need to reverse this trend has been acknowledged and the trend is currently reversing in many regions, following also political commitments such as the Maputo declaration. 75% of world poverty is rural, largely directly or indirectly associated with smallholder farming, but the bulk of investment in smallholder agriculture is made and will have to be made by smallholder farmers themselves [FAO, 2012], which makes smallholders necessarily part of the solution of increasing the amount of investments in agriculture in general.

But the question of amount of investments needed in agriculture shall not hide the more important question of the kind, nature and direction of these investments. As an investment means using current resources to increase capacities in the future, the “vision” of the future of agriculture is central to the question of priority investments and of which related constraints to unlock in priority.

In the past three decades, after structural adjustment policies, the vision was often driven by the expectations of a development driven by agricultural export markets and a focus on investments for export value chains, with the consequence of leaving smallholders with very limited access to investments opportunities to develop their farming activities, and often the only option as to use family labor capacities in a context where it was also drained by the search for more remunerative off farm activities.

There is however now a growing consideration for smallholder agriculture that is reflected in most agencies concerned with development questions [IFAD, 2011]. The question of the participation of smallholders in the future of agriculture is also gaining a priority position on political agendas (as happens in G20 meetings²). Explicit reference to it is made in the 'Principles for Responsible Investments in Agriculture [PRAI]' discussion [FAO et al., 2010] that is being continued within the CFS

The adequacy of past investment policies to underpin sustainable agricultural development is now strongly challenged in a new context of emerging trends, including population trends in land-scarce countries, growing urban populations, resource scarcity, environmental degradation and increased natural risks (including climate change), price volatility and evolving patterns of trade.

Achieving food security for a growing world population by 2050 is possible as many foresight studies confirm but all available forces to enlarge agricultural production will be needed and smallholder agriculture can play a role from now. 1.4 billion people live under poverty, out of which more than the two thirds live in rural area. An inclusive agricultural model is needed and CFS can play a role in framing these orientations, against exclusion.

Finally what is at stake on the agenda – with regional specificities – is the definition and prioritization of the multiple roles agriculture can play in societies. The roles will vary according to national setting and will evolve with time. For that we need a specific and renewed thinking about smallholder agriculture - compared to other patterns - with strong technical basis in order to perform but in a more integrated territorial vision where agriculture can be a fully inserted and vibrant activity among others.

² Interagency Report, 'Sustainable Agricultural Productivity Growth and Bridging the Gap for Small-Family Farms', *Report to the Mexican G20 Presidency (2012)*, 89.

1 DEFINING SMALLHOLDER AGRICULTURE

1. There are many different ways to define smallholders and smallholder agriculture. This diversity reflects different historical trajectories, contrasting places, highly diverse eco-systems and varying town-countryside relations. It also reflects the different roles smallholders played and still play in societies at local, sub-national, national and international levels.

2. For the purpose of this report, we consider agriculture in a broad sense including livestock production, but also forestry, fisheries, pastoral and aquaculture production. We also consider gathering activities as being part of the livelihoods of smallholders that can amount to a significant share of their income (i.e. charcoal from wood gathering in commons, hunting and fishing).

1.1 A definition of smallholder agriculture

3. For the purpose of this report, we consider as a smallholding, a holding run by a family that derives a substantial and indispensable part, or all, of its income from agriculture and which relies on agriculture for at least part of the food consumed by the family – be it through self provision, non-monetary exchanges, or through market exchanges. The family members develop activities other than farming, locally or through migration. The holding relies on family labor with limited reliance on hired labor, but is possibly engaged in labor exchanges within the neighborhood or wider kinship framework. Reciprocal relations are important here.

4. Smallholders are people who are actively engaged in improving their livelihood through the development of a resource base that allows, among other things for agricultural production. This resource base comprises different assets or capitals (human, natural, social, physical and financial) and it is considered to be 'small': it is, as yet, not or barely able to render an acceptable livelihood. That is why smallholders continue to strive for further development of their resource base. This allows them to improve and enlarge agricultural production in order to go beyond precariousness.

5. Smallholders are family farmers and this has important implications. First there is a close integration between productive assets and the patrimony of the family. This may induce de-capitalization in the event of urgent, unpredictable and costly expenditure (for health or social obligations such as for funerals). It also allows some of the patrimony to be sold in order to increase productive assets. The high level of risks and the modest means available imply that unpredictable expenditures can trigger an impoverishment circle. Secondly, when products are sold, there is pressure to first feed the family and repay loans or debts; thus the marketable surplus is reduced, cash incomes remain low and, consequently, investments through cash expenditures become difficult. Thirdly, smallholders often make investments by using their family labor. This implies that the quality of life in terms of health, and access to basic domestic services is of primary importance. This is also true for education and training to improve family's skills. Smallholders are already largely part of the market economy – even though their participation varies considerably.

1.2 How small is small³? The worldwide picture today

6. There is no universal definition of 'small'. What is 'small' and what is considered as 'large' depends very much on the context. In China and India smallholders will have far less than 2 hectares of land while the small Brazilian farm may be up to 50 ha. In other countries size is measured by the volume of sales, as in the US or now in France (USDA Census, 2010 French Census). Nevertheless, the smallholder is a reality in all types of countries (Canada, USA, Africa, EU, China, Asia, Latin America,

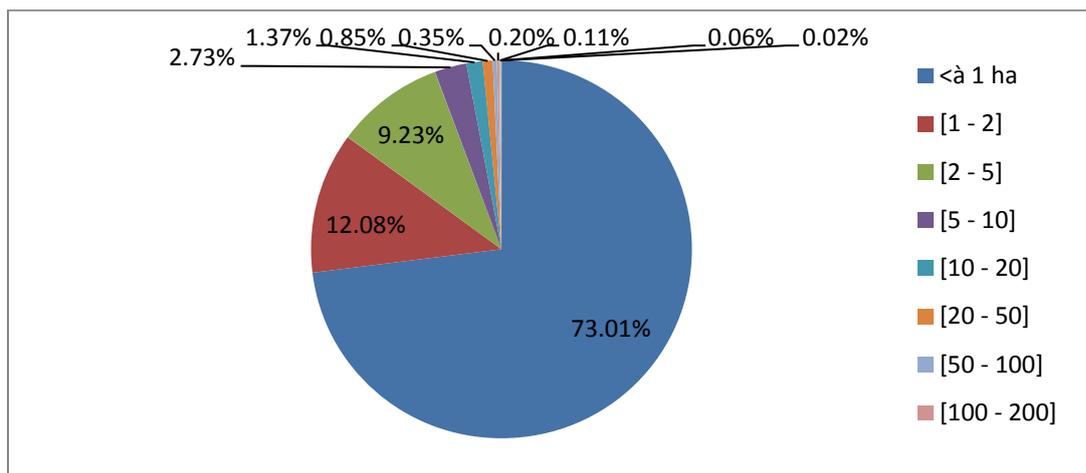
³ Borrowing the title from Carmen Hubbard, 'Small Farms in the Eu: How Small Is Small?', *111th EAAE-IAAE Seminar 'Small Farms: Decline or Persistence'* (University of Kent, Canterbury, UK, 2009).

Australia and New Zealand) and large numbers are the norm, not the exception (see for instance the regional approach followed by IFAD in their recent Conference on this issue [IFAD, 2011]). What we can agree on is that small is a notion that is dependent on time, space and the significance attributed to smallholder agriculture in societies.

7. The significance of smallholder agriculture is not limited to a subgroup of low income countries only. In 2012, one encounters in all countries of the world specific smallholder configurations. This is the case in OECD countries, developing countries, but also in Brazil, India, China and other developing countries that have reached “middle income” status in the past 15-20 years. This does not imply, of course, that the problems faced by smallholders are identical in all these countries. Neither does it imply that the role of smallholder agriculture in wider processes of development is the same everywhere. However, nearly everywhere smallholder agriculture intersects with issues of (relative) poverty, contributions to food security and food sovereignty, economic growth and broad rural development issues.

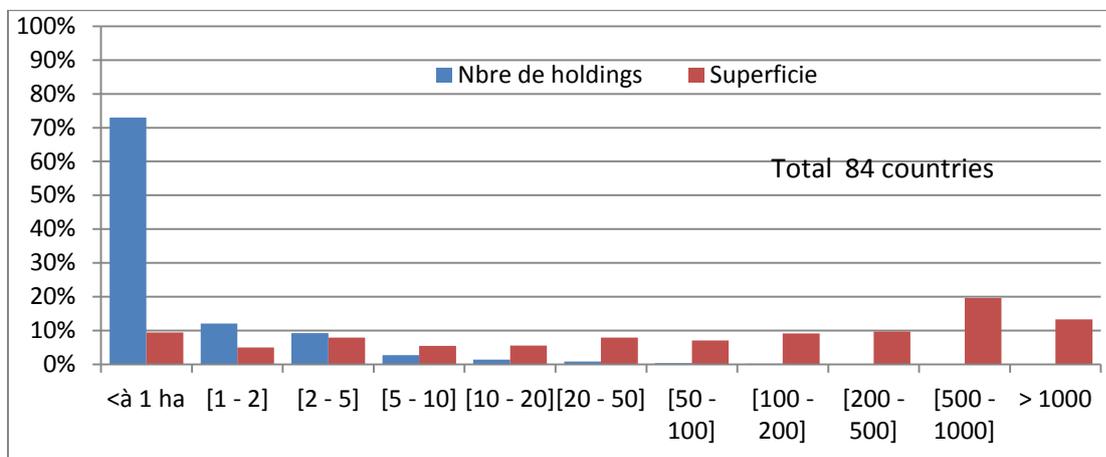
8. Even if we may consider that the size of the farmed land is a debatable proxy, recent FAO data from 84 countries show a clear and strong global picture: worldwide, 73% of all farms units dispose of less than 1 ha of land. This proportion rises to 85% if we consider 2 ha, which is the threshold mostly used in the literature.

Figure 2: Total number of holdings per land size (84 countries)



Source: [FAO, 2010]

Figure 3 : Total number of holdings by land size and corresponding land occupation



Source: [FAO, 2010]

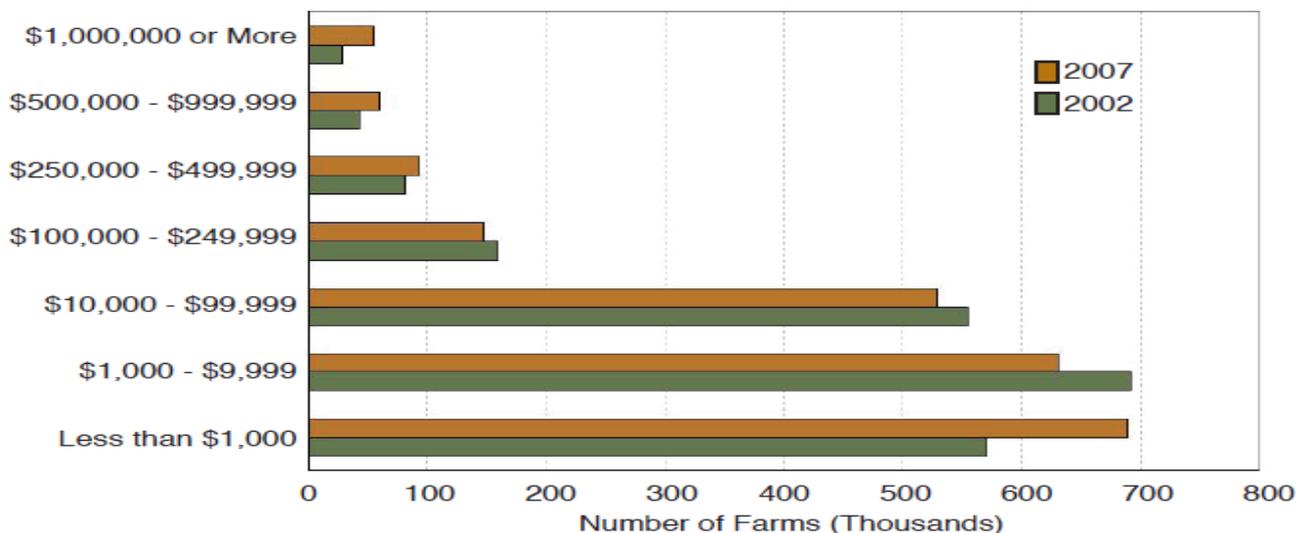
1.3 Diversity of situations

1.3.1 Illustrations

9. We present here some significant figures in contrasting situations to illustrate the phenomenon.

In the **USA**, where agriculture has reached a high level of concentration, the 2007 Agricultural Census shows an increase in small farms numbers compared to 2002. Both sides of the size scale show increases, but the number of small farms [small farms are farms where total sales are below \$250 000] increased by 118,000 whereas the number of farms with sales of more than \$500,000 grew by 46,000 over the same period. The number of small farms counted in the 2007 Census of Agriculture was 1,995,133, corresponding to 91 percent of all farms [USDA, 2007].

Figure 4 : Number of farms by sales class



Source : [USDA, 2007]

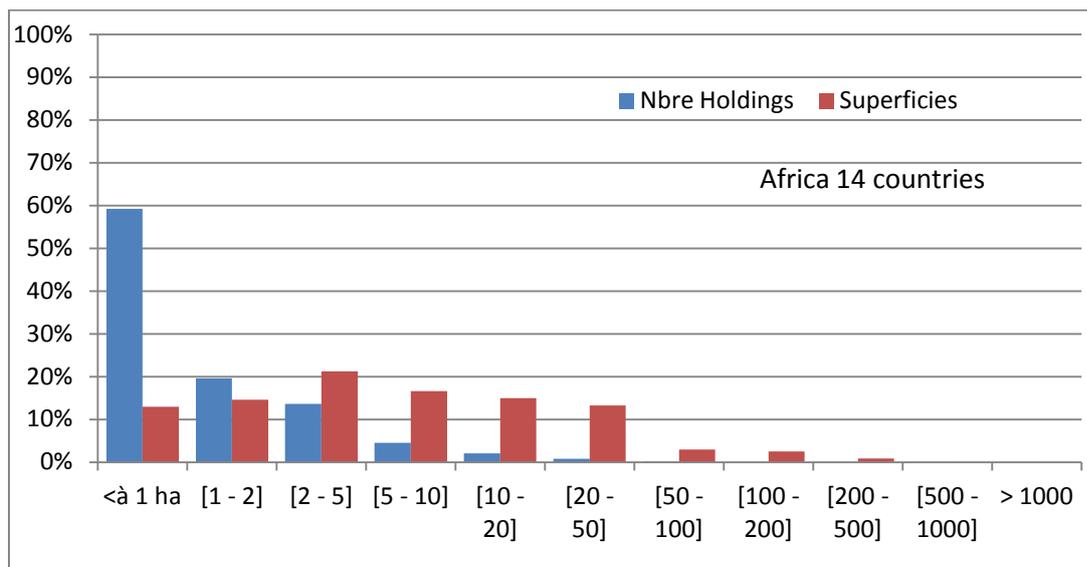
10. These farms are not “niche-market” oriented farms. Almost 50 per cent of the farms that sold between \$100,000 and \$249,999 of agricultural products in 2007 specialized in grain and oilseed production followed by cattle and milk production. The largest category of production for farms with sales between \$10,000 and \$99,999 was beef cattle and calves followed by grains and oilseeds. More than half of farms that produced less than \$10,000 were beef cattle or “other crop” farms. This category includes hay farms and farms where no single crop comprised more than 50 percent of sales [USDA, 2007]. Unlike the general image we all have of the US agricultural sector, small-scale farming is a real concern for public policy [USDA, 1998] and national and States programs are defined and implemented to support their development⁴.

⁴ See for instance the national program: <http://www.nifa.usda.gov/familysmallfarms.cfm> and examples of Land Grant Universities supporting their development through research and extension, in Oregon <http://smallfarms.oregonstate.edu/> and at Cornell <http://smallfarms.cornell.edu/>

11. In **Japan**, there is no official data or statistical category for "smallholder". However, among scholars and officials, smallholders are usually considered equal to part-time farmers and size is also considered as a criterion to categorize smallholders. The 2010 Census data give an idea of the importance of these types of farmers: part-time farmers number are nearly 1.2 million and account for 72.3% of the total number of farmers; considering now the size of the holding, we find that more than 900,000 (55.2%) farm less than 1ha and 1.3 million (80.6%) farm less than 2 ha.

12. In **Africa**, the pattern regarding the number of ha per holding is around 80% of holdings below the 2 ha threshold (even though we only have 14 countries in the available WCA data base).

Figure 5 : Total number of holdings by land size and corresponding land occupation (Africa)



Source: FAO, WCA 2010

13. China presents a unique type of smallholder farming. Collective land ownership ensured that every rural family owns user rights for farming. Thus, there are more than 240 million smallholder farmers in rural China. The average farm size is less than 0.6 ha and is declining overtime. With the integration of smallholder farmers into the globalized market, more challenges are facing these massive numbers of small farmers in rural China.

14. In the **European Union**, figures for 2005 [Eurostat] showed a total of 10.3 million farms of less than 5 hectares within EU 27. This total included 3.6 million between one and 5 ha in size, which some Member States defined as "semi-subsistence" farms; and 6.7 million of 1 ha or less, usually regarded as "subsistence" farms⁵.

Taking into account this huge diversity, we can state that smallholder agriculture is a reality in all types of countries - both in the North and in the South - and that large numbers are the norm, not the exception.

⁵ Conference "Local agriculture and short food supply chains," European Commission (EC), Brussels, 20/04/2012, http://ec.europa.eu/agriculture/events/small-farmers-conference-2012_en.htm

1.3.2 Policy concerns

Therefore these figures cannot be ignored, their significance is variable depending on the national institutional and political settings and policy debate is now beginning to take this issue into account. Throughout the world, either in developed or developing countries there is now a growing concern for “small farms, smallholder agriculture, family agriculture, etc” which are similar, partially overlapping but not equivalent.

The current CAP reform envisages a number of new possibilities for the economic development of small-scale farming with specific orientations for local markets development⁶. The EU concern for small farms is strengthened by the process of inclusion of new member States from Central and Eastern Europe with a high level of “semi-subsistence” or “subsistence” farms [ENRD, 2010] and recent research takes into account the diversity of patterns to simulate different policy options (Fritsch et al., 2010). Even though the debates are far from reaching a consensus on the ways of dealing with the new transformation path to be implemented (see [Mincyte, 2011] for example on Lithuania), at least there is a growing concern about how to proceed since the EU carries both successes and failures from previous CAP periods. Whatever the motivations or debates, these categories are now part of the policy agenda, in one of the most intensified agricultural regions of the world.

In **Africa**, the Senegalese *Conseil national de concertation des ruraux* (CNCR) established a memorandum at the international forum held in Dakar (2010), the title of which was: “How can family farmers feed Senegal?” This policy orientation is shared by sub-regional and continental platforms, as shown in the Report of the workshop organized in Cameroon (2011) by ROPPA (Western Africa), PROPAC (Central Africa) and EAFF (East Africa): “*Agricultural investments strengthening family farming and sustainable food systems in Africa*”. At continental level this message was carried to international and official audiences within the FAO during the side event organized by the **Pan Africa Farmers Organizations** (PAFO) platform during the 37th session of the CSA meeting in October 2011 [PAFO, 2011].

At international level the campaign to establish 2014 as the International Year of Family Farming by the UN is a true recognition that way of organizing farming activities deserves specific attention.

1.4 Time and demography are fully part of the picture: variety of patterns

In each country, smallholder agriculture is following its own evolutionary pathway. We will illustrate here how demography and policy impact on this pathway by referring to two cases.

India presents a specific pattern corresponding to what we could call a demography led pattern showing a continuous increase in the number of households and specifically for smaller sizes (Figure 4) and a reduction of the average size starting around 1960 [Figure 7]. This pattern corresponds to specific countries as China, India, Indonesia, Pakistan and the Philippines as discussed by Nagayets [2005].

⁶ EC (2012), *ibid*

Figure 6: Evolution of the total number of holdings in India and number of holdings by class size between 1971 and 2000

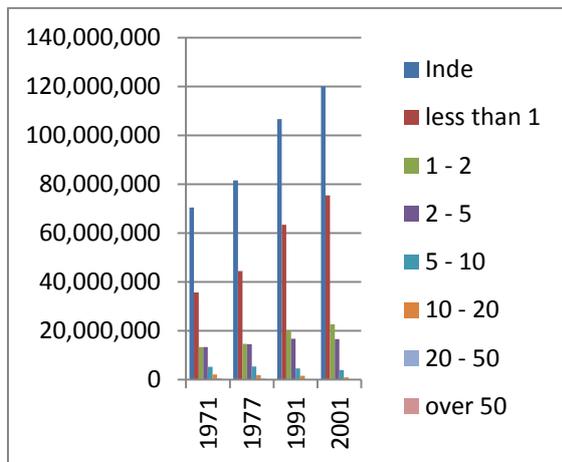
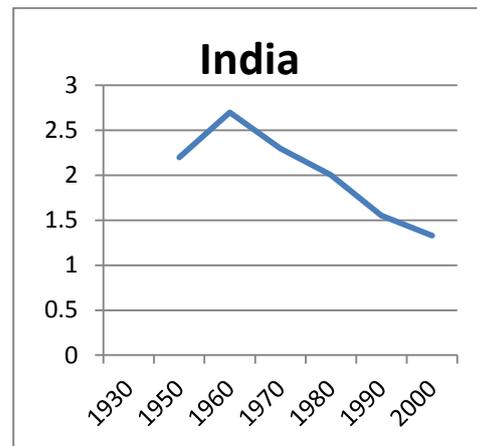


Figure 7: Evolution of average size per holding in India



Source: FAO, WCA for India

In **France**, on the other hand, the number of farms is continuously decreasing whilst the average size of the farms is increasing. This pattern can be found in developed countries that experienced the pathway for modernization through the substitution of family labor by mechanization and motorization. This process was accompanied by social schemes to allow smallholders to retire and make land available for those who were able and willing to engage in the scale enlargement. This evolution is the result of a policy-oriented process and was made possible socially through the availability of jobs outside the sector for the children of those who left their farms. This would not be possible under the present conditions where unemployment rates are increasing in the EU. This pattern corresponds to the EU pattern (see [Nagayets, 2005]) and is also valid for other OECD countries that followed the same type of modernization policy framework (see [Machum, 2005] for Canada).

Figure 8: Evolution of the total number of holdings in France and number of holdings by class size between 1971 and 2000

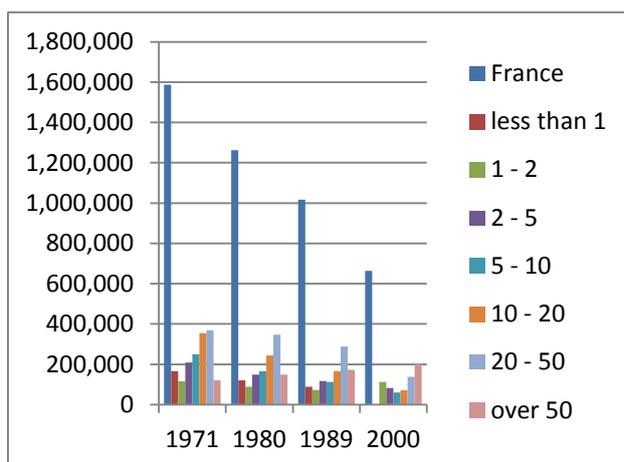
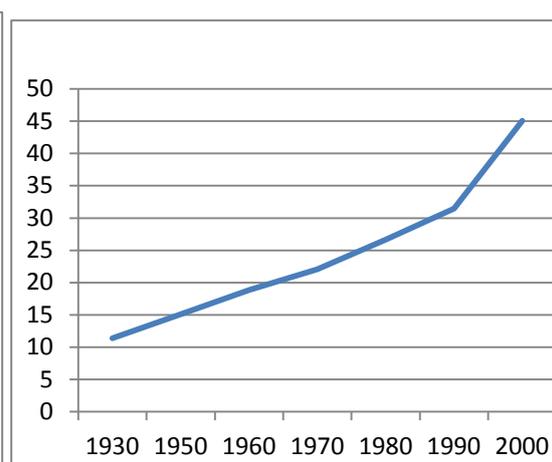


Figure 9: Evolution of the average size per holding in France (1930-2000)



To date **Brazil** has historically presented a dual agrarian structure [Maçano Fernandes et al., 2012] and counts for a historical process of land reform and social movements (MST) fighting for their rights to land or for social rights in the case of hired farm workers (Contag). Since democratization and around the early 1990's, public policies were specifically designed to address smallholder support needs through "family farming" programs. So, after a sharp decrease, linked to agrarian reform, the

mean size of holdings is relatively stable, but with regional differences that do not appear in this aggregate. Even though the total number of holding decreased between 1970 and the mid 1990's, the relative share between small and large holdings remained quite stable with some variations between size classes.

Figure 10: Evolution of the total number of holdings in Brazil and number of holdings by class size between 1970 and 1996

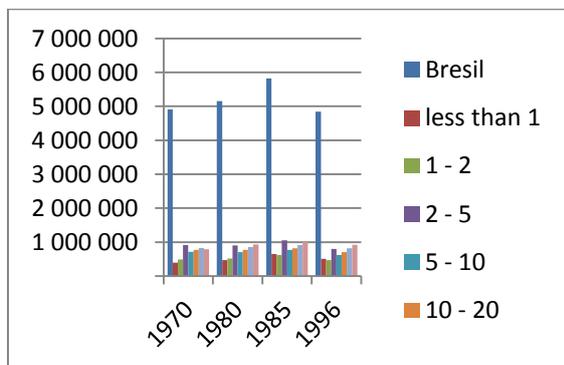
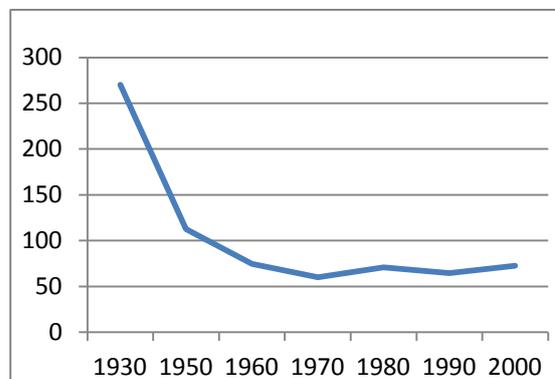


Figure 11: Evolution of the average size per holding in Brazil [1930-2000]



2 SIGNIFICANCE OF SMALLHOLDER AGRICULTURE

2.1 Smallholders play a major role in food security

Smallholders are the major providers of food and non-food products around the world. They also invest in processing raw materials, adding value, developing small and medium size craft industry that can reach large volume in all economies.

2.1.1 Smallholders in food and non-food production

China alone has at least 250 million smallholder units; they dispose of only 10% of the total amount of agricultural land that is globally available, and they produce 20% of all food in the world. This is an important indication of the productivity that might be achieved in smallholder agriculture.

Brazil, another major agricultural powerhouse, has a dual agricultural structure. The totally available land in Brazil is unequally divided. The smallholders units only dispose of 24.3% of the total area, whilst the large corporations control 75.7% of all land. Nonetheless, smallholders produce 38% of the total value of production. Expressed in absolute terms: corporate agriculture produces, on average, 358 Reais / hectare per year while smallholder agriculture produces an average 677 Reais / ha per year. These data show that the inverse relationship between farm size and land productivity⁷, is still omnipresent today. This is reflected in the strategic contribution of small holder agriculture to food security. In Brazil 58% of all milk is produced by small holders; for chicken and pork this is respectively 50% and 59%. For coffee the contribution of smallholders is 38%, for maize 46%, for beans, the contribution of smallholders reaches 70% and for cassava this is as high as 87% (data from MDA, 2009). In Brazil, there is currently a heated debate, both in science and in policy, on the meaning of these data.

When it comes to agriculture and food production, *heterogeneity* is, both between countries and within countries, is overwhelming. This translates, among other things, into debates such as the one that

⁷ Carefully documented in the well-known CIDA studies of the 1960s for the continent as a whole

currently rages in Brazil. Nonetheless, when it comes to *numbers*, *productivity* and *contribution to food security* and resilience, smallholder agriculture comes time and again to the fore as a major provider.

When smallholder agriculture is compared to other ways of organizing agricultural production (e.g. large entrepreneurial and corporate farms) there emerge some remarkable and at first sight confusing contrasts. This applies especially when it comes to *yields*, i.e. the physical production per unit of land. If there is a level playing field (when *ceteris paribus* applies) smallholder agriculture often shows an impressive productivity. Yields are higher than those achieved in large entrepreneurial farms or in corporate farm enterprises. This partly associates with the type of crops. Many high value crops that require a labor-intensive way of farming perform far better in well-developed smallholder agriculture than in other types of farming. This was already clearly argued in a previous HLPE study (Report 2, July 2011: p 33), “Small farms may be more efficient in growing these crops [that require significant manual input]⁸ than large ones because of the favorable incentive structure in self-employed farming and the significant transaction and monitoring costs of hired labor” (see also de Janvry *et al.*, 2001).

On the other side of the equation it applies that crops for biofuel (maize, sugarcane) can be grown more efficiently in large-scale corporate enterprises (although there may be other reasons than efficiency only for deciding differently). As regards animal production, it applies (from the efficiency point of view) that a smallholder type herding could be superior to large-scale breeding when the use of hills and mountains is taken into account. If cattle breeding and fattening is instead concentrated in feedlots, the large-scale type of organization could display greater efficiency. . However this has to be carefully examined across regions and systems. Smallholders also face efficiency constraints and there are cases of efficiency challenges in smallholder systems. The size is not the only parameter to compare efficiencies, one need to take into account all costs, externalities generated by concentration, and it has to be recognized that in some regions extensive grazing may cause deforestation. So this is a complex issue that we cannot fully examine in this preliminary version. Nevertheless, one can agree that some extensive grazing systems are “efficient” in the sense that they are able to give value to harsh environments that would not be suited to more intensive systems. It is also important to consider that exploiting harsh environments is not an easy tasks and living conditions are difficult and technical risks may be high like in Sahelian regions. If mobility is a powerful strategy to use scattered and unpredictable resources, it may need to be reinforced by reducing risks through targeted veterinary and technical support system to reduce high rates of mortality.

However, the capacity of smallholders to achieve high production levels per unit of land has been amply documented for different places and times (see for example CIDA for Latin America in the 1960s, Netting (1990) and a recent World Bank paper for a wide survey of developing countries in the 1990s and [Van der Ploeg, 2008] for a similar analysis applied to European agriculture).

The opposite situation might be encountered as well. Sometimes smallholder agriculture shows a very poor performance, which, taken in its immediacy, leads some observers to argue that smallholder agriculture is unable to contribute to food security for a growing population. In a previous HLPE study (Report 2, July 2011, p 25) this issue was already addressed. It was argued that yield gaps may occur in small holder agriculture as a consequence of *limited or restricted access*⁹ to the factors of production and the non-factor inputs needed (which may be caused by a variety of reasons): “Yield gaps exist [...] due to various reasons, such as poor access to inputs, and weak infrastructure. Four classes of intervention can help bridge the yield gap: raising productivity through revitalizing extension services [see Box 10]; making markets function better and providing market access; strengthening rights to land and natural resources for individual local producers and communities; and investing in physical infrastructure in order to facilitate access to markets and investment in rural economies”. In

⁸ As e.g. rubber, fruit and vegetables

⁹ According to Rabobank 60% of the rural population in developing and emerging countries lacks access to basic financial services (Rabobank, Cooperatives and Rural Financial Development, October 2012, p. 43)

brief, smallholder agriculture can be potentially very productive per hectare; however, there can be constraints that block this potential.

2.1.2 Smallholders in food processing

Small and medium-sized farms can integrate production and processing of raw materials to develop products that play an important role in local food markets and cultures. Despite their small and medium-sized these production systems occupy a significant place in terms of quality and quantity in many countries, both in terms of economic contribution through value adding and from the social and economic point of view, as the number of jobs created particularly in rural areas, is far from negligible. These activities contribute to food security through income generation, added value and availability of food at affordable price for consumers.

Gur (brown sugar cane) in India, is a wide spread production with about 5 million tons per year in units having a capacity between 1 and 5 tons processed / day. This implies the use of 50 million tons of sugarcane and about 1 million hectares harvested¹⁰ [Muchnik et al., 1990].

For the same raw product, Colombia's *trapiches* were estimated around 12,000 to 15,000 using animal traction and producing 850,000 tons *panela* annually corresponding to 191,000 ha harvested [Boucher et al., 1998]. They generate around 9 millions working days to grow sugarcane and 15 millions in processing which represent 50,000 to 70,000 permanent jobs.

In Benin a traditional sector consisting of small scale family run units, provides 80% of the production of palm oil. This craft industry has always been able to adapt to changes in the upstream sector (variations in the volumes of raw materials offered by planters) and downstream (diversification of demand), and cover most of the local market. The craft system remains alive, and his long life demonstrates its ability to adapt. The demand characteristics of red oil by consumers have varied across times; competition from imported oils and urbanization being the main drivers to changes. New techniques have secured the stability of the sector.

These are only few examples. For palm oil similar situations can be found in Nigeria and other African countries. In the case of brown sugar similar situations exist in Pakistan, Bangladesh or in most Latin American countries. Other products can also be mentioned as cassava processing in so many way by craft industries often run by women: making "farinha" mandioca of Brazil, or "temphé" in Indonesia, with tens of thousands production units.

2.2 Smallholders as a social, cultural and economic sector

Smallholder agriculture is home to (or: houses) many social groups who are involved in struggles for emancipation and who are to be assisted wherever possible in their emancipation processes. This applies to women (who form a majority in smallholder agriculture), to youngsters with low levels of education and to elderly people. It also applies to the many minority groups that in the past have found refuge in the agricultural sector and who are still trying to rise above the many injustices they experienced. Examples here are the *quilombolos* from Brazil and the *libres* from Colombia (these are groups of slaves who escaped in the past from plantations and who developed smallholder agriculture in remote places). The Indian people from the Americas are another example. Especially in countries

¹⁰ These figures would deserve updating as well as those for *panela* in Colombia, but note that exist a national federation Fedepanela gathering this craft sector to service producers and voice in national policy agenda see <http://www.fedepanela.org.co/> engaged in organic production. The extent of these activities could be more accurately defined since they represent huge amount of jobs, income and value added that is strategic for territorial development.

like Peru and Bolivia they are omnipresent in the agricultural sector. For all these groups it applies that development of smallholder agriculture directly supports their emancipation.

Smallholder populations also represent an impressive and highly variegated cultural repertoire that includes arts, music, dances, storytelling, architecture, etc. A respectful attitude is needed here. Part of this cultural heritage is what the French rural sociologist Henri Mendras referred to as *art de la localité*. This concept refers to the many knowledge systems in smallholder agriculture. These developed over time and represent an amazing capacity to adapt to the specificities of local eco-systems and societal patterns and to turn agriculture into a highly productive system that is essentially based on local resources. Through their '*art de la localité*' smallholders are able to confront the high *altiplanos* of the Andean mountains, the flooded mangrove woods of West Africa and the rocky *baldios* in the North of Portugal. These harsh conditions are converted into rich resource bases (like the tropical rice polders or *bolanhas* in western Africa, the pasturelands of Portugal and fields for alpaca herding in places such as Peru) which give high yields.

Smallholders can contribute considerably to economic growth, directly through increases in production and productivity and indirectly by forming a large (part of the) internal market, especially in developing countries (Mazoyer and Roudart, 2006). When producing sufficiently and achieving increasing incomes they will considerably spur the sale of so called 'wage goods' produced in urban industries. In periods of economic crisis this is a strategic feature.

There are also more general considerations that may be relevant when considering smallholder agriculture. If, alongside the need to increase total agricultural production, there is *also* a considerable need to enlarge rural employment and/or to raise rural incomes then small-holder agriculture probably carries more potential than large-scale forms of agriculture. The former normally generates far more employment than the latter. For Brazil, for instance, it applies that the small holder sector (which only uses 24% of the available land) generates 74% of all agricultural employment.

The choice to opt for one or the other furthermore depends on the availability of a strong peasant population with a willingness to improve rural livelihoods. It also depends on the development stage of the country. In industrialized countries and in countries in successful transition towards industrialization there is less need to enlarge rural employment. In developing countries with a large rural population it will be different.

2.3 Smallholders are fully part of the market economy and develop a wide range of activities

Although smallholders generally are producing to feed their families, they are profoundly part of the market economy. Subsistence-oriented smallholders are often referred to in the literature but we may consider here that they are almost a "vanishing" type [and an "ideal type" that does not exist any longer in most places]. As any citizen, in nearly all parts of the world, smallholders need cash for access to manufactured goods and services of all kinds.

2.3.1 Smallholders have multiple markets engagements

The markets form a crucial domain for smallholder agriculture: they are decisive for its development or failure.

Small-holdings participate in different markets. These are:

- The down-stream markets that serve as an outlet for the products and services produced on smallholdings.
- The up-stream markets where specific inputs (and technologies) might be acquired.

- The labor-market on which different members of the smallholders family might sell their labor force in order to obtain a salary.
- The general market for consumer goods (which is an important part of the internal market of every country).
- Land markets where they may rent, or buy or sell land, or participate in other forms of land tenure arrangements involving two or more households.
- Financial markets (including informal lenders) where they acquire capital to cover both operations or investments

The relations between these markets and smallholder production units are highly differentiated and this has important consequences, especially since there is considerable interaction with feedback, feed forward and synergy effects. If, for instance, downstream markets offer relatively stable and remunerative price-levels to smallholder producers and if the latter are not too dependent on upstream markets (which would involve relatively high cost levels), then the contribution of smallholder agriculture to the expansion of the internal market might be considerable. Or, another example, if decentralized industrialization (or migration) allows many smallholders to gain relatively good wages and if these wages are used for remittances or savings that will be invested later in farming, then the participation in labor markets might considerably strengthen agricultural production for the downstream markets.

Markets are generally imperfect and risky; smallholders are often in a vulnerable position regarding:

- the price of products and their volatility (as buyers or sellers),
- access to financial resources through money lenders or micro finance institutions (MFI)
- access to wage labor with generally low levels of remuneration
- access to land through rental markets or share cropping

Smallholders keep a variable but widespread share of their production to feed the family and engage in reciprocal relations within the kinship or neighborhood. Doing this is not a backward attitude; it is also a means of being protected from market volatility. This share of self provision is a key component of the smallholders' risk management strategies which define a certain level of autonomy regarding access to food.

We can say that smallholders can be considered as skilled experts in managing risks and scarcities: they deal with imperfect and volatile markets under unfavorable conditions.

Consequently, the challenge for smallholders regarding markets is not that of "inclusion" (as they are already part of) but that of the conditions that governs their participation in the market economy.

2.3.2 Types of agricultural markets

When talking about markets for agricultural products, it is important to acknowledge that there is not just one 'market'. A first set of important differences regards the different levels: global markets, national markets, regional markets and local markets¹¹ all of which might have –or not have – different dynamics, different modes of operation and different impacts (see [IFAD, 2010]¹² in which these

¹¹ Important here is that of all food and agricultural products produced globally, only 16% physically crosses international borders. The remaining 84% circulates only in national, regional and local markets. This does not exclude, of course, that this latter flow becomes also increasingly subordinated to the parameters that reign in the global market.

¹² Rural Poverty Report 2011

differences are acknowledged). A second set, which cuts across the first, concerns institutional embedding: spot markets, markets governed by global food chains, alternative forms of governance.

Smallholders may face highly differentiated market relations depending on the economic and institutional contexts including large differences within a country depending on the regional specificities: linkages to national urban markets, opportunities for regional markets, access to international markets through global value chains.

As a general trend, however, recent analyses¹³ show the growing and in many countries already dominant position of modern, globalized agrifood markets controlled by multinational retail and agro-processing firms. The institutional, organizational and technological characteristics of these new markets have important distributive consequences given the exclusion of a large proportion of the resource-poor segments of the smallholders sector. These markets also affect the dynamics and conditions of traditional regional, national and sub-national wholesale and retail markets.

Box 1 : Low levels of contract farming even in favorable market dynamics¹⁴ [Rural Struc program]

This low level of contractualization—especially the lack of formal contracts—is significant. It reflects the low intensity of the integration processes in the surveyed regions and the limited development of high-value chains, in which product requirements justify contracts. This situation is not totally surprising, even though several “winning” regions had been selected with the aim of identifying market dynamics related to higher value products or agro-industries. In some of these regions, contracts with agribusinesses are almost nonexistent. This is particularly true in two regions of Nicaragua (Terrabona and Muy Muy), where only a few farmers are directly connected to fruit and vegetable integrated value chains (domestic supermarkets such as Walmart v/v La Union - Palí or La Colonia) and to dairy chains (supermarkets and processors such as Parmalat or Eskimo).

However, these cases illustrate an important finding: in many situations, contractualization is not occurring at the producer-level segment of the value chain; rather, it is downstream, between the wholesaler or cooperative and the processing firm or procurement service.

Each market has its own requirements in terms of standards, and access conditions may be contrasting: often considered as “remunerative markets”, they are highly demanding and induce investments and costs which the majority of smallholders cannot bear.

Local and national markets functioning under local standards and arrangements are the most accessible but they are also supplied by products that are part of the smallholders’ diets: for the producers themselves but also in terms of markets volumes for national or regional markets, the markets for these products are the most accessible to the vast majority of smallholders [see [AFD-Cirad-Fida, 2011] for West and Central Africa, but also [Nweke et al., 2002] on cassava.

As mentioned in recent studies and research, markets in developing and emerging countries have changed in the last 20 years to a more balanced share between staple foods and higher value products like milk, meat or fish, but also fruits and vegetables. This shift has opened up new opportunities for smallholders depending on the socio-economic status of the urban population. Innovative mechanisms for smallholders inclusion are being experienced in these rapidly changing

¹³ For example, Thomas Reardon et al., 'The Rise of Supermarkets in Africa, Asia, and Latin America.', *Am. J. Agric. Econ.*, 85 (2003), 1140-46.

¹⁴ Bruno Losch, Sandrine Fréguin-Gresh, and E. White, *Structural Transformation and Rural Change Revisited: Challenges for Late Developing Countries in a Globalizing World*. (African Development Forum Series; Washington DC: World Bank., 2012).

situations that insist on partnerships, and on technical and financial support in line with growing urban markets [Bienabe et al., 2011].

The situation is rather different in the EU, the USA, Japan, and Canada with integrated and concentrated markets and a limited number of world size players in agri-food industry and retail chains. This highly concentrated model offers huge opportunity for well organized producers groups or cooperatives, but the asymmetric market power relations makes third party regulations highly necessary.

Apart from these highly concentrated markets, new channels are emerging around cities in order to restore more direct links between producers and consumers. This movement is also built around new production patterns bringing into play a wide range of farming techniques drawing from agro ecological or organic farming principles [Friedmann, 2007] ; [Marsden et al., 2012]. This movement is still modest and we lack a global evaluation of the scope, but it works outside subsidized schemes, it provides new opportunities for creating new farms, it needs more labor per production unit in situations where high rates of unemployment are increasingly worrisome, see [Deléage et al., 2012] for a case in Brittany. These newly emerging channels are not completely new, since consumer cooperatives have a long historical background in some countries.

Box 2: Case Study: Japanese CSA so-called *Teikei*

The *Teikei* system, known as a form of Community Supported Agriculture (CSA), started in the late 1960s in Japan (Sangeeta and Hisano 2011). *Teikei* means “cooperation” or “partnership” in Japanese. This is a system developed as a form of direct sale to re-connect agricultural producers and consumers to make supply chain shorter and more visible in order to achieve food safety and high quality (including organic) (Parker 2005). In this system, agricultural producers, usually smallholders, and consumers make mutual agreements on planting and pricing (Ichikawa 2006). Sometimes consumers agree to come to pick agricultural products by themselves and also participate in farm tasks such as weeding. Under the *Teikei* system, producers can obtain stable income and cover their production costs. The *Teikei* system appeared as a social movement against industrialization of agriculture and food supply chains which generated food risks such as pesticide residues. Several types of *Teikei* system exist in Japan and in other countries, known as CSA in the USA, AMAP in France, etc. Their experiences are important for smallholders to stabilize their farming activity and household income as well as to seek alternative food networks.

These networks can work for individual consumers' procurement but they can also be mobilized through specific procurement programs with safety nets and social protection programs as established in Brazil to alleviate poverty and under nutrition and to restore school attendance [Rocha et al., 2012]. Here and there, new collective procurement schemes could emerge, providing significant opportunities for smallholder agriculture combining economic and environmental sustainability.

Nevertheless, technical patterns are still in their infant age, research investments on more sustainable models are to be consolidated around sustainable principles. In between, the transition period has to be carefully thought out avoiding ideological postures against conventional intensification patterns but optimizing – whenever necessary – the use of chemicals.

Of late, under pressure from civil society, large retail chains and agro industries are engaged in multi-stakeholders roundtables in order to cope with social and environmental concerns for some of the most industrialized commodities [soya, palm oil, etc] in order to define voluntary and non binding principles.

Box 3: Newly emerging markets North and South

As part of new rural development processes designed to address different market failures, farmers (smallholders included) have started to develop new products and services that entail more added-value per unit and which are increasingly marketed in novel ways. Through the construction of new infrastructures and new institutional arrangements that link producers and consumers, new market segments are being created that are, as it were, nested in the general markets. This occurs for example for high quality food products, regional specialties, fresh and local products, agro-tourism services, 'green energy', care services, maintenance of landscapes and nature and the production of biodiversity. By carefully 'nesting' the corresponding flows and transactions, a wide range of mutual benefits can be generated. According to a comparative European research program (IMPACT) the estimated extra net added-value generated through these new markets amounted in 2000 to some 6 billion Euro for Ireland, the United Kingdom, the Netherlands, France, Germany, Italy and Spain together (Ploeg, 2008). Nested markets also abound in China (see Ye, Rao and Huifang, 2010). Brazil also offers some very interesting forms, some created by smallholder movements (like ECOVIDA), others created by the State (PAA) (see Schneider, Shiki and Belik, 2010). A comparative analysis of these nested markets is given by Ploeg, Ye and Schneider (2012).

All these movements take stock that the industrialized food system is reaching its limits regarding environmental sustainability and social inclusiveness. Even in situations where agriculture is still a dominant source of food, income and employment for the majority of the population, there is an urgent need to reconsider technical issues in the light of sustainable management but considering conventional patterns and notably avoiding demonization of the use of chemical fertilizers in situations where access to such innovation is strategic for increasing food security.

Research and extension need to profoundly update strategic orientations in order to cope with these new challenges. This is assumed to have huge consequences for investments at different levels, from the provision of public goods to the smallholder level: (i) how can the conditions for smallholders market integration be improved including technical issues? (ii) different agricultural markets will require different types of investments.

2.4 Revisiting energy efficiency issue

Smallholder agriculture today is working with a low level of fossil energy consumption. More than one billion smallholders are hand workers with rudimentary equipment. Important margins for progress exist with the available conventional means with limited investments at smallholder level (Affolther et al., 2012).

Smallholder agriculture is, on the whole, more energy-efficient than other forms of agricultural production (Netting, 1993; Pimentel,...). When the consumption of carbon energy is translated into calories, it applies that smallholder agriculture of the 'peasant type' generates for each calorie consumed, 4 to 10 calories of food. For smallholder agriculture of the 'Green Revolution type' this is 2-5 calories of food produced per calorie of energy consumed. Large-scale corporate agriculture of the high-tech type only produces 1/10th to 1/20th calorie per calorie consumed [Raina, 2011]

One of the major ecological distortions linked to the current organization of agricultural production at global scale is the abandonment of meadows and pasturelands for extensive grazing in hills and mountains and the simultaneous use of fertile arable land to produce grains for fattening cattle that is concentrated in large feed-lots. The concentration of cattle in these feedlots (and the use of cheap grains) strongly outcompete smallholder herdsmen, thus provoking the abandonment of meadows and pastures.

Generally speaking, smallholder agriculture can considerably contribute to the maintenance of natural resources (soil productivity, landscapes, water, biodiversity, carbon-capture, etc.) and it can do so, if the right conditions are provided, in highly efficient ways. In doing so, it can contribute to avoid major geo-hydrological problems (land- or mudslides), help to address climate change and manage sweet water reserves.

2.5 Smallholders are highly heterogeneous

Wherever located, the smallholders sector is never internally uniform. Rather, there are major internal differences. These are sometimes expressed by referring to the resources controlled by the family, or to the relative wealth of the farming family. Other frequently used criteria refer to the total volume of production (or the relative share in it). The reference is made to the 5% of the larger smallholders in Brazil who produce two thirds of total production (Vieira Filho, 2012)¹⁵. In former debates in Italy, the same constellation was referred to as the '*decimo eccelente*'. [Saccomandi, 1998]. Box 4 (on internal differentiation in Latin America) is a recent example.

However, such patterns are far from static. Positions change frequently. Already in the 1970s Zachariasse (1979) showed, for the Netherlands, that farmers who were initially at 'top' positions could, after 10 years, be in the lower echelons, and vice versa. The same is indicated by cohort-analysis.

Reverse trends exist where large, successful family farms might be divided at the moment of succession and be split into smaller units. And young couples having a small farm might be very dedicated to develop this smallholding and make it effectively grow. This has proved to be the case in places as different as China [Fei, 1992], Africa (Berry, 1985) and the Netherlands (Bruin et al, 1991). The recent Rural Poverty Report 2011 [IFAD, 2010] shows also that poverty, generally speaking, is not a static stage: people leave it and enter it.

The typical internal distribution and the associated dynamics are due to both demographic and socio-economic differentiation. Smallholder realities change over time, History shows a constant "production" of smaller structures, together with a general movement towards the concentration of land and assets in some places. In other places, the generational transfer reduces the sizes of holdings (Asia). Both movements can coexist but the permanence of smallholders, and their numbers, calls for closer interest. It challenges the conventional agricultural development pathway: not all smallholders are romanticized "relics" from the past or about to disappear.

Recent studies in Dutch dairy farming [J. Zijlstra et al., 2012] equally show that there are no simple, uni-lineal growth processes in agriculture (i.e. large farms earning more, therefore investing more and thus further expanding, after which even more is earned). Large entrepreneurial dairy farms that expanded considerably over the last decade and therefore show high debt levels per kg of milk, are the ones that suffered *negative* cash-flows during the 2008- 2009 period of low milk prices. They had to be re-financed by the banks. Now, the expectation is that in the current period (characterized by high fodder prices) many of these large farms will go bankrupt because the banks are now unable or unwilling to refinance these farm enterprises again.

Socio-economic differentiation occurs when exploitation relations emerge within the SH sector. Smaller farmers work (sometimes for very low wages) for the richer ones who thus can accumulate more wealth and expand their holdings. As [Little, 1989] convincingly argued, socio-economic and demographic differentiation might occur simultaneously and interact.

¹⁵ José Eustáquio Ribeiro Vieira Filho, 'Radiografia Produtiva E Tecnológica Da Agricultura Familiar No Brasil. ', (Nota Técnica: IPEA, 2012).

The overall pattern is further complicated by the fact that the 'lower' echelons of the pyramid are often enlarged through the inflow of newcomers (for Europe see for example, [Safiliou-Rothschild et al., 2002], [Bock et al., 2000.], whilst at the 'top' many people definitely shift towards the urban economy (whilst selling or renting their rural resources to newcomers or smallholders for example who want to further develop their holdings).

All this implies that the heterogeneity of the smallholder sector cannot be interpreted as reflecting two single, but combined flows. One being larger farms expanding further, the other referring to the 'rest' (of somewhat smaller farms) that are definitely involved in the unavoidable process of disappearing.

Agrarian policies, the overall political economic context and huge interventions (often large investments) may further complicate the scene.

There are several strategic considerations related to this complex panorama. First, price-increases alone barely help to alleviate poverty in the lower echelons of the pyramid (where poverty evidently is the most acute). The marketable surplus is too reduced here – instead, offering more employment opportunities (of whatever nature) can be far more fruitful. Price increases definitely may help to spur investments (and production increases) higher up in the pyramid. Second, those located at the lower echelons will appear in the local food markets as buyers (at least for some of their food). Improvement of local markets might, therefore, be helpful. Third, in particular situations it might be true that a considerable share of those who are at the bottom of the pyramid, derive their main income from the industrial and/or service sectors. This implies that the agricultural sector functions as a massive 'refuge' for the wider economy. Smallholder agriculture thus helps to absorb shocks, especially in times of crisis. This is true for China, for African rural areas but also in developed countries where economic crisis renews the vision on rural life.

Box 4: Heterogeneity of smallholder agriculture in Latin America

Diversity of Smallholder Agriculture in Latin America¹⁶, adapted from [J. A. Berdegúe et al., 2011]

To sum up a detailed reading of the best estimates of the size of smallholder agriculture in LAC, enables us to conclude that it is made up of around 15 million farms.

About 65% correspond to a category of smallholders that rely significantly and perhaps increasingly on nonfarm sources of income to sustain their livelihoods; for them, agriculture complements other activities, and remittances and cash and in kind social transfers and supports are of great importance. Still, this group owns or controls well over 100 million hectares. Even if small, the income derived from this land is absolutely critical for their survival and to reduce their vulnerability to shocks of all kinds. Many if not most in this group would be considered poor. Yet, an agriculture-based or agriculture-led development strategy, would miss the fundamentals in the case of this group.

A second category is those family farmers who indisputably and most clearly meet the criteria considered by most authors. Their livelihood predominantly depends on the operation of their farms, they hire little or no non-family labor, and therefore they operate and manage their farm with the members of the farm family. They are integrated in agricultural markets, but face significant challenges derived from the limits of their own household and farm assets, and

¹⁶ The authors consider another component which in our opinion does not fit in with our common understanding of smallholder. They are consolidated family farms that are fully commercial. They are not to be ignored since positive synergies – but also competing claims – can occur and empirical evidence also indicates that heterogeneous membership in collective organizations often provides positive outcomes for the less well off. But given the scope of the report, they cannot be our main focus here.

because of the imperfections of factor and product markets, and the gaps and limitations of institutional frameworks of all kinds. This group is made up of about 4 million small farmers, who control around 200 million hectares of farmland and represent around 27% of smallholders. The contribution that this group makes to feeding Latin America and, increasingly, other regions of the world, cannot be underestimated. Because they are deeply embedded in the local economies, their agriculture-based development has production and consumption linkages that make them important local and regional players. This is a group made invisible by the definition of smallholders according to the 2 hectare criterion, but at least in LAC, we believe that they represent the best bet for the revitalization of rural societies.

3 A FRAMEWORK FOR SMALLHOLDER AGRICULTURE AND INVESTMENTS

3.1 Smallholders and investment

Typically, investments in smallholder agriculture are made by smallholder families themselves. They may invest their savings, but many investments take the form of labor investments. Buildings are constructed by the available family labor force itself (sometimes the labor force of others is mobilized as well through socially regulated exchange or reciprocity) and the same applies, for example, to irrigation schemes, anti-erosion works, terraces, etc. (all this may imply works at the neighborhoods, village, or community levels). On the farm, labor investments also occur through the enlargement of herds, the improvement of tools, the selection of improved varieties and the associated building of ecological capital. A typical example is the ongoing improvement of soil fertility (through goal-oriented interventions of different types)¹⁷.

Many tasks within the wider labor process in smallholder units are geared towards improving the available resources (for example, better cows that produce more) as well as increasing their numbers (more cows). Together, these tasks constitute a process of *capital formation*. In smallholder agriculture, capital formation does not necessarily occur as investment of financial or physical capital, as is the case in corporate agriculture. It is more the exception than the rule. In smallholder units, capital formation basically occurs through labor investments (in which *human* and *ecological* capital, instead of financial and physical capital, are central)¹⁸.

This does not imply that financial investments are irrelevant, on the contrary. The point, though, is that labor investments and financial investments require different conditions.

The balance of drudgery and utility (a concept that was coined by the influential Russian agrarian economist [Chayanov, 1924 [1990]] at the beginning of the 20th century) is decisive for labor investment. The extra utility of additional production decreases with the overall increase of production. And with such an increase in production, the extra drudgery needed for one extra 'unit' produced increases. Utility and drudgery are to be brought into balance.

The importance of this Chayanovian view resides in the fact that through labor investments smallholder families can engage in capital formation and thus contribute to growth and development. This is primarily *endogenous* development: it is driven 'from within'.

For capital formation to occur, certain requirements are to be met:

- There has to be hope in the smallholder families, i.e. the long term expectations need to be positive (if not, people will not move the 'utility' line upwards).
- There has to be security. That is, if the property rights of current and future resources are not acknowledged and actively protected, then it is quite unlikely that smallholders will invest their labor in their qualitative improvement and/or quantitative increase. Both the socio-cultural and the political economic importance of smallholder agriculture need to be recognized and assured by the State.

¹⁷ Through the ages the building of productive soils was one of the main forms of capital building in smallholder agriculture.

¹⁸ This also explains why smallholder farming can operate under conditions where corporate agriculture cannot function because there is insufficient return on financial capital.

- The downstream markets in which smallholder agriculture is operating need to show price-levels that are remunerative. There should be relative price stability in these down-stream markets. Too much price volatility excludes planning and thus hampers capital formation.

Alongside labor investments that result in improved soils, buildings, animals, crops, etc., smallholders also invest in and through: (i) the accumulation of experience and knowledge; (ii) collective action; (iii) crafting appropriate governance rules and corresponding enforcements to maintain individual and joint investments over time as it has been empirically and theoretically demonstrated [Ostrom E., 1990]

3.2 A framework for smallholder and investment analysis

The SRL framework can be used to consider, in an integrated way, several key characteristics of a family-managed agricultural holding within a set of off-farm activities . It is based on different assets to invest in; it considers not only different types of capital but also the entitlements that make investment or mobilization possible through collective action, organizations, and institutions. The activities can be either socially or market oriented. A similar framework was used by [Reardon et al., 1995] to assess conditions under which poor households can invest to develop specific assets in order to improve their natural environment and to increase productive outcomes.

The different types of capital / assets

Human capital refers to the quantitative and qualitative labor available at holding level. It should consist of both physical health and cognitive skills (education). Many of the investments made by these smallholders regard **their family labor**. Therefore, we should consider food and nutrition status, as well as health as key factors that allow investments. Investment in education is also a key component in this process.

Social capital may be considered along three lines:

- kinship, neighborhood ties linked to **social activities** (schooling, leisure, health, self-help groups, religious groups, cultural associations);
- **customary ties** that influence access to natural resources;
- development or professional oriented associations (rural producers' organizations, development associations, etc).

Natural capital is given by local resource endowment but is also a product of human actions. Part of the investment is linked to the improvement of biological processes:

- Improving soil fertility (and all the biological soil biodiversity) through organic matter transfer is a key point – and transport is a bottleneck as regards investment in soil (with little priority in development agendas) and a source of inequality.
- the performance of available genetic material is not always a constraint, but as far as risk and resilience are concerned, diversity and robustness are important for vulnerable production conditions. "Cultivating more biodiversity" is an asset for smallholders.

Investments in natural capital imply access and security conditions [not necessarily property, see Ostrom and various other scholars]. Investment in natural capital may also involve collective action and in these cases will depend on coordination capacities involving individual, customary and public (often local authorities) stakeholders. Inequality in access or lack of access for most vulnerable may require public action to redistribute or allocate land through agrarian reforms.

Physical capital and financial capital

Some authors [Scoones, 1998] aggregate them in one single category, i.e. economic capital. Here we prefer to disaggregate them since their nature is rather different. The access mechanisms are equally different. Both physical and financial capital access can be supported by collective actions through organizations.

3.3 What type of investment?

3.3.1 Investment and productivity

According to The New Palgrave Dictionary of Economics (2008): *“Investment is capital formation – the acquisition or creation of resources to be used in production. As such, it captures the production side of intertemporal consumption/savings decisions.*

In capitalist economies much attention is focused on business investment in physical capital, such as buildings, equipment and inventories. But investment is also undertaken by governments, nonprofit institutions and households, and it includes the acquisition of human and intangible capital as well as physical capital. In principle, investment should also include improvement of land or the development of natural resources, and the relevant measure of production should include non-market output as well as goods and services produced for sale. (...)

There is a widespread mythology that investment is good and the more investment the better. But investment may be good or bad and there may be too much as well as too little.”

This last sentence is of great relevance to our report. Of course, most smallholders lack investment capacities but, on the other hand, it can probably be argued that in developed agriculture overinvestment may also be an obstacle to efficient economy.

Investments are a means of increasing productivity, which in turn is at the core of the transformation of agriculture. Productivity is a measure of production efficiency concerning the factor engaged in the production process. In agriculture, production is a complex process and productivity is measured or estimated within a system approach.

3.3.2 Farm level

Productivity can be measured in volume or in value. When measured in value productivity greatly depends on relative prices, especially of inputs but also of equipment and machines. In less developed countries, the costs for equipment or technology, including inputs, are higher which makes productivity improvements more difficult to achieve. This situation could be improved through infrastructure provision, strengthening collective and individual capacities through training and access to information to reduce the individual costs of investments and improve efficiency. Productivity is sensitive to the technical pattern for agriculture which also depends on relative prices trends. Models highly dependent on fossil fuels need to be reconsidered since their productivity will certainly be threatened by foreseeable increases in energy costs.

For a low-resource holding and scarce availability of funds, decisions to invest presuppose a stable environment and a rather clear picture of the expected outcomes. Risk (technical or economic) has never encouraged investment, but existing technologies can be selected according to its potential to reduce certain risks. This characteristic should generally gear support programs towards smallholders, which is not always the case.

The available technology allows yield improvement, to increase labor productivity or to reduce drudgery and to diversify production and quality. Most of agricultural development programs have

been designed to increase productivity through intensification. Fewer were concerned with increasing productivity through improving the organization of work, the management of collective resources, the reduction of drudgery, including the development of transport. In some cases, possible innovations were not regarded as suitable since farmers could divert them from the technical use that agronomists recommended. (i.e. using draught animals for transport of people instead of exclusively using them to plow).

Food processing is a key component of the domestic food system as well as a source of income and employment, which is often done by women. As regards the smallholder economy, these activities are less risky than production, and have a potential to generate income if connected to urban markets. Within local productive systems, proximity and social relations make it possible to reduce transaction costs (between suppliers of raw materials and processors, between processors and traders, etc), thus increasing the efficiency of these systems. Networks of relationships also favor development of collective action to gain in economies of scale.

Individual investments will be enhanced by collective action and the provision of public goods. Support for the development of collective action for smallholders is of paramount importance, but it does not mean that these organizations should be limited only to smallholders. In reality organizations develop heterogeneous memberships and this is positive for the group.

3.3.3 Collective level: sector-oriented investments

Investment decisions at holding level presuppose a combination of favorable factors within the environment. Clearly productivity is an issue and there are many ways of improving efficiency and outcomes for smallholders, which do not necessarily imply an increase in size: organization inside the farm and with others, shared investment for equipment and machinery, etc.

The collective level is a key level for increasing and improving physical and social capital at holding level through collective investments.

Investments concern improved natural resource management at landscape level in order (i) to harvest more water in the soils through landscape management; (ii) to increase the number of trees through support to smallholders and organizational support at landscape level; (iii) to better organize the overall use of the available landscape in order to make it more productive.

Following Ostrom's insights [1990, 1992, 1993], we need to consider rules and regulations to manage natural resources and investments (irrigation systems) in a more sustainable way as key investments for smallholders. The empirical evidence and theoretical foundations provide knowledge to frame new institutional arrangements that at the same time are "collective investments" but also allow individual investments at holding level.

Another categories of investment are geared towards improving conditions for market access by increasing individual and collective efficiency in linking up to market chains, seeking economies of scale and a substantial reduction in transaction costs, as well as increasing smallholders' bargaining power with downstream agents. Extension of this types of investment may concern warehouse management for storage just after harvest [and getting a better price], small or medium scale processing equipment [to keep more added-value at farm or territorial level, etc].

The third important issue is the lack of power and negotiation capacity of most small-scale farmers in their relationship with their environment. Negotiation skills, power and political representation are also critical if small-scale farmers are to participate in the improvement of their institutional environment and in setting up a realistic regulatory framework. Without a strong environment, producers and producer organizations alone may lack the capacity to anticipate market trends and changes. All these

issues can be dealt with through farmer organizations and collaborative networks, which can take very diverse forms.

Beyond these issues, it is recognized that the 'ownership' of policies is a condition for success; it is therefore a strategic investment for national governments and for the donor community to support – when needed – the strengthening of smallholder organizations at regional and national levels to represent their interests and channel interests and needs for investment. It is obvious that the diversity of natural and socio economic conditions makes it impossible to define from a national level the actual investment needs of local groups or individuals.

3.3.4 Collective level: socially oriented investments

Since smallholder domestic and productive budgets on the one hand and patrimony and assets on the other hand are fungible entities, investing in social issues serves productive issues at the same time. This is now widely recognized in recent papers dealing with the effects of social public goods provision on agricultural productivity. Hence, investing in healthcare can serve two different purposes at smallholder level: (i) improving the quality of labor for better productivity; (ii) reducing consumption expenditures on health which can lead to more investment in production by limiting the pressure on the domestic side of budgets. Health insurance schemes as implemented in China are part of the possible investments. Investments in education serve similar purposes: (i) improving human capital with better cognitive skills which can lead to better productivity (direct effect); (ii) improving the capacity of knowledge acquisition (technology, marketing information, etc). Here also, organized groups for collective action in social services are of paramount importance.

The same observation applies to social safety nets [HLPE, 2012] that are a key component in the Right to Food entitlement and are part of the means of intervention to improve health and nutrition and therefore allow smallholders to invest in productive activities with potentially better outcomes. These supports when targeted can play a role into helping family farmers to overcome conjunctural difficulties and reduce the de-capitalization process which is often difficult to recover from.

3.3.5 Corporate investments (investment funds, corporations, individuals...)

Modern corporations are a central feature of contemporary agriculture and agrifood systems throughout the world, including in developing regions. Corporations can provide access to technology just as extension services did and still can - but they differentiate in a sense that they combine information with access to means of production under varying conditions according to contexts [loans, direct payment, credit based on harvest...]. This may include a variety of inputs, goods and services depending on the production system and technical pattern. Corporations communicate, finance, insure, wholesale, retail, process, brand and certify. Sometimes corporations engage in farming as well. Corporations tend to play a key role in connecting urban consumers and smallholders. In developed countries highly integrated and concentrated schemes channel a large proportion of food. This way consumption is rapidly spreading in developing or emerging countries [Reardon et al., 2003].

In Northern countries, they contract with producer groups and cooperatives but although smallholder cooperatives find large market opportunities there, it goes hand in hand with unbalanced market power and the fairness of the contract is not always there. In Southern countries where producer groups and cooperatives are far less developed and strong, there is an important challenge for all players. Can large scale retailers or agro industries contribute to the strengthening of smallholder organizations? No doubt both parties should share some common interests, but there is a need for establishing fair mechanisms that allow investments in human and collective capital at smallholder level. Governments and international agencies have a key role to play but producer organizations need to be given the highest priority to strengthen their managerial and voice capacity.

Most corporations are private firms, many of them transnational and publicly-listed, but a few of the largest and more influential are still family-controlled; tens of millions of ordinary persons, mostly in the OECD-countries, are shareholders in these firms, which are prominent players in the economies of their country of origin. But there are also state-owned corporations involved in agriculture and agrifood systems, many of them in developing countries. There is a debate regarding the way thousands of farmer-owned corporations, including some that have the legal form of cooperatives are run and managed: do they behave almost exactly in the same way and under the same rules as, say, Wal-Mart or do they act in different ways regarding the values that they share with their smallholders / shareholders? Certainly we can find both behaviors [Ito et al., 2012].

A major problem of tens of millions of poor smallholders is that they lack good access to modern corporations and to the goods and services they might provide; investments in smallholder agriculture need to include some designed to close this gap. Yet, there is also plenty of evidence that the relationship between smallholders and corporations can often –although not always by far - be unfair, detrimental and even predatory to the former; investments are hence also needed to impede or mitigate unfair relations.

It is of course entirely possible and legitimate that a country can decide that it wishes to block or to contain the expansion of private corporations in certain domains in order to achieve certain policy objectives; the long-standing and recently-changed policy of India with respect to foreign retail firms is an example. But we focus our discussion on those cases where the presence of corporations is needed and wanted as a matter of policy.

Corporations do not service smallholders when one or both of two factors are present: institutional failures (which often are failures by design) and missing public goods. The presence of one or both of these factors discourages or even blocks corporations from reaching certain countries, or some regions or types of farmers within countries. Lack of roads or electricity, rampant corruption of public officials, foreign direct investment laws and regulations, or state-supported monopolies are examples of this kind of factors. All of these represent opportunities for public investment and public policy and reforms (and, indeed, in some cases, for dis-investment!)

The corporation could service smallholders, but does not because it is not sufficiently profitable to do so. There are multiple examples, many of them successful, of policies directly geared at establishing a relationship and nurturing to a point where it can continue on its own. Examples are: public programs in many countries throughout the developing world that provide services to smallholders to improve their capacity in order to become more attractive for, say, a food processor, an export firm or a supermarket chain; fair trade and organic food NGOs that help smallholders reach large numbers of affluent consumers through supermarkets in developed countries; governments that support poor women farmers to achieve “financial inclusion” through group-based, government-subsidized savings schemes in collaboration with private banks; a plethora of NGO and government programs supporting the expansion of mobile phone networks into remote rural areas; private firms, including huge multinational corporations, that run large-scale programs to increase sourcing from smallholders, often in partnership with NGOs, etc.

Yet, investments are also necessary to make sure that the relationship is fair and that the smallholder has a real chance of gaining from it. Here the main strategy needs to be that of fostering transparent and competitive markets that are ruled by well-enforced laws and regulations that are not tailor-made to serve the interests of the corporations themselves, and with smallholders having sufficient information and high-quality advice and support in order to make the best possible decisions. There is nothing more beneficial to a smallholder who will always be less powerful than any corporation, than the good rule of laws.

3.3.6 Public goods provision

Roads and communications, electricity, irrigation, schooling, water and sanitation are the basic public goods that can make life in rural areas more attractive for younger generations. At the same time these basic conditions help improve the productivity of family labor. Investing in public goods will lead to poverty alleviation as well as reducing regional disparities (cases from India and China, by [Shenggen Fan et al., 2000], [Shenggen Fan et al., 2002], [Zhang et al., 2004]. Roads can help smallholders to have better market access, off-farm employment (income generation, [Gibson et al., 2010] and in regions like Africa market access is far more expansive than in other regions [Livingston et al., 2011] . In Tanzania for example, having better roads or villages closer to roads would make local people support more of government efforts on poverty alleviation [Kwigizile et al., 2011]. [Warr, 2005] showed that between 1997 and 2003, poverty level was reduced by 9.5% and among which, development of road contributed to 13%.

Communication: better information (technology, pricing, credits, etc...) transfers for productive as well as for social matters. A China study [Shenggen Fan et al., 2003] shows that returns to rural communication investment can be high. For example, for every dollar invested in communication, it can increase rural GDP by nearly 7 dollars. It also increases agriculture GDP by 1.91 dollars. The return to off-farm income increase was as high as 5 dollars.

Electricity: better conditions at both on-farm level and off. Studies in China show that investment in rural electricity had significant positive impact on both agricultural and rural GDP growth, At the same time, it also helped to increase off-farm income and helped significantly for poverty reduction.

Irrigation: irrigation for improved production conditions in arid and drought prone areas where production is too risky under rainfed conditions

Schooling: here refers to construction of schools, providing good teachers and school facilities and etc.. The same study [Shenggen Fan et al., 2003] showed that investing in education yield highest poverty reduction impact among all investment categories.

Drinking water and sanitation: better health outcome, lead to better labor productivity...

Table 1: An earlier study on returns to public investments in rural areas in China [Shenggen Fan et al., 2003]

Type of investment	Returns/Impacts			
	Return to Rural GDP	Return to agricultural GDP	Return to off-farm income	Poverty reduction
R&D	9.59	9.59	-	6.79
Irrigation	1.88	1.88	-	1.33
Road	8.83	2.12	6.71	3.22
Education	8.68	3.71	4.97	8.80
Electricity	1.26	0.54	0.72	2.27
Communication	6.98	1.91	5.07	2.21
Poverty loan				1.13

Note: Figures in table reflects for each unit of investment of a certain kind, how many units the return was. For poverty reduction, it means that for every 10,000 yuan invested, it can bring poverty people down by how many people.

3.4 Why is it crucial in this period?

The international discussion on investments in agriculture (including the debates in the CFS) are fed by recent dynamics that centre on land acquisition and "land control" through long term lease [Anseeuw et al., 2012.]. Lack of transparency is the rule except for those funds that manage public

money and are therefore compelled by regulations to release information. The associated investments may take various forms from direct land acquisition to buying shares in agri-business ventures ; this issue is increasingly complex, as it involves finance and deals that are mostly confidential [Buxton et al., 2012]. It is important to acknowledge the differences between different types of investments since they will generate contrasting impacts in rural areas where smallholder agriculture is the dominant way of farming.

Agriculture suffered from long term under investment [World Bank, 2007];[FAO, 2012]. This triggers the question what kind of investment is needed in agriculture for the next decades within which the world population will continue to grow and in which, it will especially be the urban population that will further increase its share?

CFS requested the study to include a focus on market linkages, which represent a major and global concern for the majority of smallholders. The importance of market considerations in any smallholder development policy comes from the fact that the category of people called “subsistence farmers” is never totally disjoint from markets. All smallholders have cash needs and hence are – more or less – fully part of the market economy. Smallholders need a certain amount of cash to cover part of family basic needs..

Recent studies¹⁹ highlight the needs and possibilities to make such investments more profitable for smallholders. The current contractual arrangements are often framed under huge power asymmetries between poorly organized smallholders and large scale corporations. The sole contractual arrangement cannot be presented as the solution for smallholders’ inclusion in value chains. State regulations, collective action and public goods provision are needed as well. Applied research, extension, capacity building, access to productive resources at reasonable cost, risk reduction on both technical and economic sides and basic infrastructure for communication and domestic services are all urgently required [Burnod et al., 2012].

These findings are coherent with recent reflections by IIED²⁰ [Buxton et al., 2012] that question the potential benefits of investments in large scale production schemes in regions where smallholder farming is already in place and constitutes “the backbone”.

¹⁹ P. Arias et al., *Trends and Impacts of Foreign Investment in Developing Country Agriculture. Evidence from Case Studies*, ed. Fao (Rome: FAO, 2012).

²⁰ This brief is a synthesis of considerable works undertaken by IIED on the issue raised by smallholders’ relations to markets.

4 CONSTRAINTS TO SMALLHOLDER INVESTMENTS

4.1 Smallholders' recognition and voice

4.1.1 Diversity of legal recognition but globally low level of recognition

The first point to mention is the situation of the majority of smallholders at world level: the lack of legal status for “farming and related activities [such as gathering, herding, fishing, hunting] is reflected in the low level of social and institutional recognition of their role in societies. This lack of “professional recognition” means there is little room for being part of the policy dialog or even being a recognized part of the citizenship.

This statement is in line with the recent study²¹ commissioned by the Human Rights Council Advisory Committee (UN General Assembly) on the advancement of the rights of peasants and other people working in rural areas. They are considered rightly as the “most vulnerable people working in rural areas, in particular smallholder farmers, landless workers, fisher-folk, hunters and gatherers”. This reports stress as most urgent need the recognition of their basic rights under the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights. Specifically these rights cover “(a) the right to food, (b) the right to adequate housing, (c) the right to health, (d) the rights to water and sanitation and (e) the right to education are the most relevant with regard to the protection they offer for the rights of peasants and other people working in rural areas”. [Human Rights Council, 2012]

These rights open the possibility for social protection to be part of the policy measure to contribute to the well being of smallholder farmers and by the way reduce the pressure on the available family budget to enlarge the assets to enlarge the resource base of the family [HLPE, 2012].

The change is on tracks with initiatives such as the Farmers Forum launched by IFAD a few years ago paves the way for national recognition of collective representation of smallholders organizations as partners in policy dialog by governments [IFAD, 2012].

It also opens a space for initiatives to define a professional and social status in the society leading to new social and professional rights and is a step to policy recognition [see for example, the Brazilian law²² to define family agriculture and the corresponding support policy measure targeted to the different types of family farmers [MDA, 2010], [Maluf, 2007]. The process has been engaged in other regions like in Senegal and Mali [see <http://loa-mali.info>] where orientations laws have been negotiated with strong inputs from rural producers' organizations. Laws alone do not make the change, but they make the change possible if adequately mobilized by the representatives of smallholders.

But the situation is far less advanced in too many situations.

²¹ Human Rights Council, 'Final Study of the Human Rights Council Advisory Committee on the Advancement of the Rights of Peasants and Other People Working in Rural Areas', *Nineteenth session, Agenda item 5* (UN General Assembly, 2012).

http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session19/A-HRC-19-75_en.pdf

²² Loi définissant la “Política Nacional de Agricultura Familiar e Empreendimentos Familiares Rurais”. http://www.planalto.gov.br/ccivil_03/ato2004-2006/2006/lei/l11326.htm

4.1.2 Large numbers but a still a too weak voice and an heterogeneous collective economic weight

The last 25 years have changed the institutional landscape for smallholder representation on both national and international level, which now occupies a space and can defend their views on various scales to influence policies, and provides improved services for their members. Corporations or associations formed by smallholders themselves have proved to be effective ways to organizing smallholders to have better bargaining power [Rondot et al., 1999] and influence policy making [Mercoiret, 2006]. Experience gained through mainstreaming and implementing support to rural producers' organizations in World Bank supported projects show the huge potential for smallholder assets enlargement and increased access [World Bank, 2012], see Box 5.

As World Bank, IFAD, bilateral agencies [The Netherlands, Swiss Aid, French Aid, etc] or Agri Agencies [Agricord for UE] played and have still to play a key role in the process of recognition of smallholder organizations as reliable partners for national stakeholders.

Box 5: Main Lessons from the World Bank experience on Building Capacity of Rural Producer Organizations

1. The efficiency of RPO support mechanisms is mostly based on the quality of the negotiation process between the various stakeholders and on the effective position occupied by the organized producers in the negotiation.
2. It is necessary to take the socio-economic and institutional contexts of the agricultural services support programs into consideration and design evolutionary mechanisms whose scope extends as the context evolves.
3. There is a need to grant autonomy to the "RPO support" component in the agricultural services support programs.
4. The specific funds set up at the local level constitute a relevant innovation and are appreciated by the producers. The gradual extension of such funds and the decentralization of their management are desirable avenues for change.
5. It is necessary to support national and regional RPOs in addition to grassroots RPOs.
6. RPO enhancement creates conditions for agricultural services to be demand-oriented; however, the efficiency of mechanisms set up depends also on the quality and diversity of service supply.
7. The scope of reformed agricultural services may be undermined by shortcomings in the economic environment of agricultural activities.
8. RPO support programs contribute to poverty reduction.
9. Activities to enhance the capacity of RPOs unavoidably impact pre-existing organization dynamics. It is essential to pay attention to these dynamics and avoid exploiting them.
10. The impact of agricultural services restructuring would be amplified if similar efforts were simultaneously made to define and implement national education and rural training strategies geared towards the same goals.
11. RPO capacity building may encourage harmonization of the various interventions in the rural area at the grassroots level.

Source: [World Bank, 2012]

Today, despite these advances, many drawbacks still limit the full potential of smallholder organizations to deliver services and perform as expected:

- Internal weaknesses and still rather limited human resources at the various levels of organization
- Increasing complexity of the institutional context within which smallholder organizations operate within asymmetric power relations with poor access to information.

There is therefore still a need to promote long-term support to these representative bodies in order to ensure strong ownership of the negotiated policies and develop appropriate and innovative

mechanisms to support a financially sustainable organizations of civil society (sector oriented but also social groups, self help groups, etc) to enable them to participate more effectively and constructively with both national and international public decisions (assuming the existence of a framework for dialogue and negotiation considered as a public good [Stiglitz]).

4.2 Persistent poverty and lack of access to resources

From the above observations we can identify the main constraints that limit, impede or destroy investment efforts by smallholders.

As stated earlier (see 2.1), smallholder farming is providing the major share of food and non food products at global level but with a high degree of internal heterogeneity regarding productive capacity. “Despite the volume of production that smallholders generate and the variety of additional sources of income they draw on, small farmers—in addition to the landless and urban poor—are among the most disadvantaged and vulnerable groups in the developing world” [Nagayets, 2005].

Of the 1.4 billion poor people (living on less than 1.25 US\$ a day), 70% are located in the countryside [IFAD, 2010]. This large amount of people potentially constitutes an enormous internal market. This potential, however, is only partially being used. Substantial improvements in the purchasing power of these *rural* people can have a substantial and significant effect on the dimensions of the internal market and thus help to alleviate the effects of the current economic crisis. The performance of China is a case in point.

Indeed, there is an obvious need to enlarge total agricultural production in the time-path to 2050 when the world population is expected to reach its peak. When smallholder agriculture plays a central role in the required increases of overall production, then there is, *simultaneously*, an important contribution to poverty alleviation [de Janvry et al., 2010] and the consolidation and strengthening of internal markets.

The analyses conducted in a selected number of countries by IFAD [2010] suggest that the demographic situation of households, asset endowment and the level of education play a major role in keeping people in poverty. Households with a higher level of dependants [not able to productively engage in activities], low asset endowment and a low level of education are clearly associated with lower capacities to seize opportunities, hence greater vulnerability and chronic poverty status.

Improving food security has been a permanent concern for governments and the donor community and the different types of intervention stumbled because of the complex nature of the issue. Production and income increases are not enough to improve food and nutrition security. Changes in income do not always induce a change in nutrition status in either quantity [calorie] or quality [nutrients and micro nutrients]. The nutrition issue is closely linked to that of food security and needs to be addressed in a holistic way linking self provision, income, gender issues and nutrition quality [Masset et al., 2011]. Moreover, food insecurity, hunger and under nutrition are wide spread among rural and smallholder households, with more vulnerable groups including women, new born, children, youth and elders.

As labor is the main source of investment, any threat to labor is a constraint to potential investment decisions. As the family provides the bulk of work in smallholder agriculture, health and nutrition concerns are the highest priority. When we say health, we include all domestic costs [monetary or in labor] that influence health: availability of drinking water in a short walking distance if not home delivered, sanitation, availability of fuel for cooking at a reasonable cost. In Europe, illness and mortality were first and foremost reduced through the provision of these basic needs (safe drinking water and sanitation) along with better nutrition, and not through the development of the medicines market. By nutrition, we include both the quantity and quality of food for the whole family, which includes self-provision and access to local markets, or through non-monetary exchanges.

Over the last 30 years, the neglect of governments (important exceptions apart) was a consequence of structural adjustment policies: public investments in rural infrastructure, medical care and schooling have increasingly lagged behind in recent decades, whilst investments in agricultural R&D have also slowed down. Investments in infrastructure are lagging behind, thus inducing higher farm-gate costs for inputs and increased marketing costs.

Hence, food and health, as mentioned above, are a drain on smallholders' domestic budgets which are closely linked to the limited available funds they can allocate to investments. Food access is a challenge for the most vulnerable households (self provision or income) but nutrition issues have not yet received the adequate priority regarding the most vulnerable within the households: new born and women, children, young and ageing people.

The work load and budget pressure often fall on women since the division of domestic labor remains as unequal as in other spheres of societies (be they urban or rural). Specific social policies should be targeted to reduce drudgery for rural women, in order to improve well being as a basis for sustainable investment in agriculture.

Poverty also limits physical investment, individual engagement in collective action, access to productive resources and as a consequence, low levels of productivity provide a low return on family labor. As regards access to investments for productive resources, micro finance institutions have often been seen as a substitute to former credit schemes that worked before structural adjustment policies. But recent reviews confirm that agricultural needs are not at all covered by this type of mechanism (see 5).

Box 6: Micro finance institutions and investments

MFI are not the solution for supporting agricultural investments unless they receive adequate means to operate as in that direction.

Most MFI are urban-oriented since activities appear less risky and more profitable, and in rural areas, consumption and domestic expenditure – food, health and education - are the priority. Agriculture is not a priority compared to less risky activities. Financial products developed by MFI are not targeted to support investment, or even to fund short term cultivation season expenditure. Investments to improve production conditions cannot be supported.

“Given that finance for agricultural purposes generally needs to be long-term in maturity and larger in amounts, traditional microfinance products appear too rigid and inappropriate if applied on their own. Agricultural production is also typically exposed to covariant risks whereby farmers tend to cultivate similar crops in the same locations. Microfinance products are largely short-term and small-scale and, therefore, more suitable for (off-farm and non-farm) commercial businesses that experience a high turnover” in [Marr, 2012]

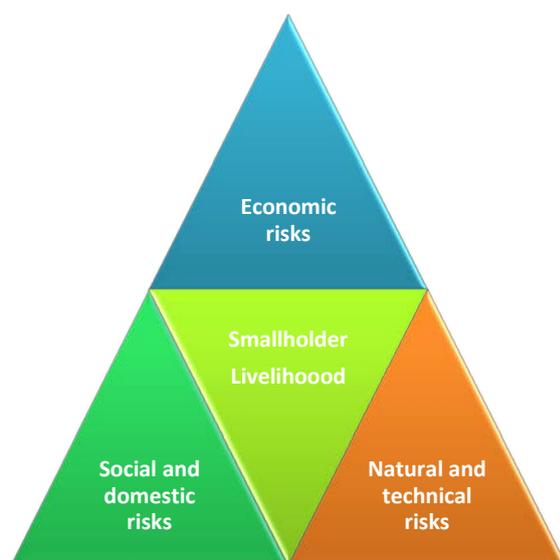
See also [Korth et al., 2012], [Van Rooyen et al., 2012] for a meta analysis stressing the methodological weaknesses of the evaluation, when evaluation actually exists. The project results reviewed showed positive – but limited - impacts on food and nutrition for children when women were the clients of the scheme and very limited or counterproductive effects on child schooling.

Poverty also limits access to education, hence human capital development. Human capital development is often limited in rural areas by a lack of basic education for youth and adapted ongoing training for smallholders. Again, provision of basic education for children places a heavy burden on family budgets and limits available funds for investments. Permanent training for smallholders is another limitation for investment since available knowledge to improve efficiency and productivity is far from readily accessible to the vast majority of smallholders.

4.3 Smallholder agriculture faces high levels of risks

Smallholder agriculture faces a combination of risks. Three levels of risks usually affect smallholder livelihoods: (i) domestic risks for the family well being including health, food and nutrition security for the most vulnerable households; (ii) natural and technical risks regarding agricultural production and natural resources; (iii) economic and financial risks for the different markets in which smallholders are active.

Figure 12: Smallholder livelihoods threatened by three main types of risks



Source: Authors

Social and domestic risks

Resource poor households face a high level of domestic risks as regards the well-being of the family. The combination of poor nutrition, health and living conditions induces precarious conditions under which any shock threatens the family's limited resources. How can these resource poor think about investing their limited resources which they will prioritize for survival? Some have defined such situations as poverty traps meaning that these households are somehow captured inside poverty with limited expectations to escape.

Food and health, as defined and mentioned above, are a drain on smallholders' domestic budgets which are closely linked to the limited available funds they can allocate to investments.

Natural and technical risks

Poor natural resource endowment is often the cause of low yields and low possible returns from higher investments that technological change would entail. There exists room for progress when investing to improve the resource base. The climatic risk is highly variable across regions and ecologies; it might increase due to climate change, but it is unlikely that these phenomena could be forecast. There are arguments to suggest that by increasing the capacity of smallholders to transform their resource endowments it could be possible to reduce the risks and at the same time increase and stabilize the production capacity of the resource. Policies and tools are needed to monitor, prevent and manage technical risks (climatic, plant pests and animal diseases).

Economic risks

Price volatility induces financial and economic risks that can be limited by the diversification strategies of family members. These efficient mechanisms reach their limits and do not provide a safe basis for sustaining investments in the long run. These erratic variations can jeopardize the assets of the holding. Domestic volatility in developing countries is more troublesome for smallholders than international volatility, which is partially transferred to local prices and mainly affects urban consumers (HLPE, 2011). These economic risks combine with poor access to financial markets or under prohibitive conditions where interest rates and repayment conditions are not at all adapted to support smallholder investments.

Moreover, due to the nature of smallholder – a social and economic entity with strong integration between domestic and productive budgets and assets - these different types of risks interfere.

Figure 13: Interactions between the three types of risks



Smallholder economy is characterized by the strong linkages between social and economic dimensions, these risks are closely inter-connected, and this combination of risks can lead to the most vulnerable being kept in poverty traps.

Without coordinated strategies and policies involving multiples dimensions there is little possibility for resource poor smallholders escaping poverty.

4.4 Policy environment disincentives

The economic and institutional environment may enable smallholder agricultural investments or act as a profound disincentive in smallholder decisions to invest or engage in productive dynamics. By economic and institutional environment we mean:

- markets for agricultural products and associated infrastructures, rules and regulations;
- markets for inputs, land, labor and credit which are mostly incomplete, risky and often missing;
- organizations and institutions that structure and regulate the sector with or without smallholder representatives;
- availability of technical and organizational knowledge through (i) research and extension; (ii) enterprises and corporations engaged in contract farming;
- access for smallholders to basic services such as healthcare, education, drinking water and sanitation, electricity, etc.

The experience gained by India [Box 7] during the “white revolution” provides an outstanding experience of inclusive development pathway combining the complementary dimension between technical, organizational, institutional and policy oriented scheme that made possible to keep up with quality market driven demand and income generation for poor and less poor farmers including landless or marginal farmers [at least owning a cow].

Box 7: White revolution in India

Dairy cooperative development in India began in Gujarat with the establishment of the milk company AMUL in 1946 in response to limited opportunities for traditional milk producers. Operation Flood built on this experience when cooperative dairy development became a priority for agricultural development in the 1970s. Beginning with support for three projects in Karnataka, Rajasthan and Madhya Pradesh from 1974, and moving to support two National Dairy projects up to the late 1980s, the World Bank has lent over \$500 million to develop the milk industry via cooperatives (comprising district unions combined into state federations). The national federation comprises 70,000 village milk cooperatives which has some 9 million members drawn from over a third of India’s 500 districts, most of whom are small and marginal farmers, or even landless farmers. The federation is responsible for producing some 13 million litres of milk daily, creating an annual additional income for each family of \$90. The projects have focused on capacity-building (strengthening cooperative institutional structures and training) and support for activities and infrastructure related to production and marketing. The overall objective was to promote viable cooperative businesses owned and managed by producers for collecting and marketing milk products in order to expand rural incomes and improve milk productivity.

Investment has been heavy, and some observers have been concerned about the cooperative being over protective and monopolistic, and the occasional inappropriate use of its political power. However, these problems seem to be heavily outweighed by impressive results, arising from committed membership, sound management, an enigmatic and influential leader and strong accounting systems. Results include the following:

- strengthening farmer control and autonomy in the milk sector, at stages of production, collection, processing and marketing;
- creating a positive economic rate of return for the project;
- enabling poor, small-scale women producers and poor landless or smallholder farmers to benefit by - being able to market their milk through the federation;
- increasing smallholder access to intermediate and sophisticated technologies;
- some cooperatives have established rural roads, rural health services for their members and a range of other social and economic services for members.

What is to be learnt is that technology alone is not to solve the issue, neither producers’ organization alone, neither economic incentives alone without technology access and collective action, neither can social services or public goods, but the combination of these ingredients can make the difference. Cross sector policies and large scale implementation can increase both productivity and production in an era of growing urban markets. These domestic markets are a potential powerful engine for future growth, provided that the technical pattern is an inclusive one.

See <http://www.nddb.org/English/statistics/Pages/Statistics.aspx> for an account of the availability of milk

During the structural adjustment period, and until now in many parts of the world, smallholder access to the capital market is blocked. This is due, amongst others things, to high transaction costs that make banks withdraw from smallholder agriculture and risk-avoidance mechanisms on both sides. Banks are currently less interested in assuming part of the risks associated to productive activities and even less when smallholders are their potential clients. Smallholders are also risks managers but they often engage in borrowing money to cope with consumption needs and not to invest [see Box 6: Micro finance institutions and investments]. Moreover, the majority of smallholders do not even imagine the banking system could play a role in helping them to invest, transaction cost is too high and there is no room for an individual smallholder in the current banking system. At the same time, the generalized

poverty in the countryside blocks the use of informal credit as well. Here is an issue for collective and public action.

But credit alone will not improve productivity unless it is combined with relevant technical proposals as pointed out by recent study commissioned by AFD [Jessop et al., 2012].

Box 8 : Creating access to agricultural finance

This study²³ emphasizes that the weaknesses and risks found in agriculture are not solved by financial institutions with financial products. The authors of this study propose that agricultural credit by itself does not make the wheat grow taller, and agricultural insurance does not stop the weather from destroying the crop. Indeed, decades of agricultural credit programs have had little effect on agricultural development. To some extent, the opposite may have happened, as in Tunisia and India where farmers have become over indebted with little to show for it in agricultural results. To have impact on agriculture, financial services must be structured to induce farmers to make innovations in their operations. The six countries studied provide some examples where this has indeed been achieved. The elements key to innovative agricultural finance are: 1) reduce delivery costs (efficient lending methodologies, technology); 2) adapt to agricultural growth patterns and cash flow cycles; 3) use value chains to ensure proper loan repayment (that credit is used for the intended purpose, that it results in increased productivity, that the farmer sells to the intended buyer, and for a fair price allowing repayment). Indeed, the value chain is central to nearly all agricultural finance innovations and key to banks' risk management. Many of the practical examples throughout this study are grounded in value chain logic. Credit risk is reduced by a viable sales contract and implicit technology transfer. The trigger in value chain finance is the linking of the value chain partners; finance is just the oil in the system. Likewise, most successful examples of agricultural credit guarantees or insurance aim to make value chains operate smoothly. By mitigating performance and price risks, producers and buyers can efficiently collaborate in the value chain. There is no doubt, therefore, that value chain thinking has to take center stage in the development of agricultural finance. From [Jessop et al., 2012]

The last 30 years marked a profound break where agriculture was not on the top of the national and international agendas. This was clearly reflected in a sharp reduction in public spending for research, extension and support to rural areas. With the recognition – or rediscovery - of the role agriculture can play in food and nutrition security, development and territorial development, there is now a new investment climate but it is not obvious that decision makers will chose to invest in smallholders.

The recent land appropriation process seems to go in the wrong direction and this clearly represents a new “disincentive” context where the resource base of smallholder is coveted. If investments are to be made, and there is a wide agreement to say there is a need to increase investments in agriculture, their design must not by any means threaten the rights of smallholders and on the opposite invest in smallholders [Cotula, 2010].

4.5 Proposal of a typology

There are many typologies to classify smallholders and distinguish between different types of smallholder agriculture. Each typology will have its own specific objectives. Our objective here is to summarize the most important variables that together govern the capacity and willingness of SH farming families to invest. The complex interaction of these variables defines different types of smallholders (although the boundaries are, of course, far from sharp). Such a classification is important because it shows that differentiated interventions are needed. There definitely is no single solution that fits all different situations.

²³ R. Jessop et al., *Creating Access to Agricultural Finance Based on a Horizontal Study of Cambodia, Mali, Senegal, Tanzania, Thailand and Tunisia.*, ed. Afd (A Savoir; Paris: AFD, 2012).

When it comes to the capacity of SH families to invest many different factors such as e.g. history, collective memory, culture, religion, ecology, community, gender relations, patterns of cooperation and world views may play a role. However, the most important interrelations might be condensed into three dimensions. Each dimension clusters a range of specific variables.

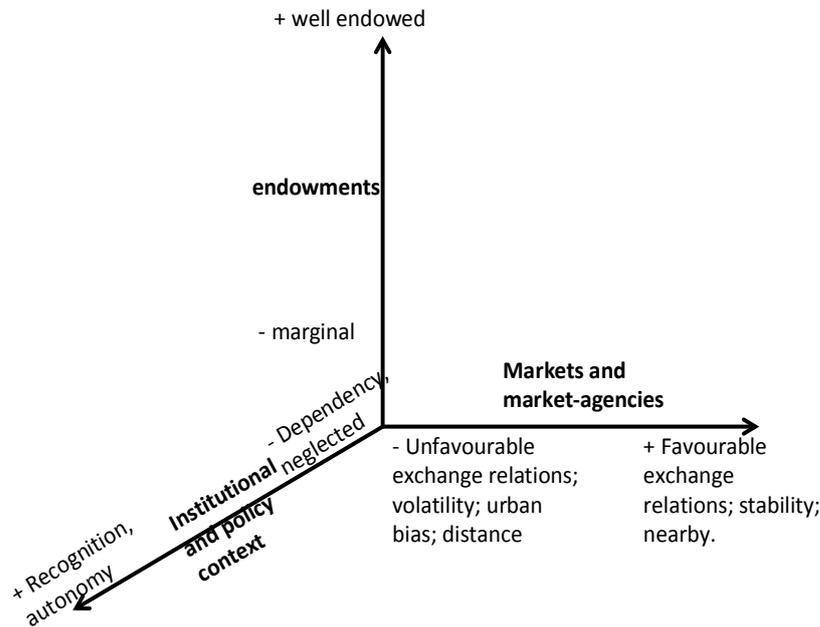
The first dimension regards the nature of the markets that are relevant to SH agriculture. These markets may present, in synthesis, favorable or unfavorable exchange relations for SH agriculture. This may be the outcome of the interplay of several different factors. Exchange relations between agriculture and industry can play a role here, just as the overall ordering of markets and the associated power relations. Price stability versus volatility is another key issue. Proximity versus distance (and therefore infrastructure) can be relevant here just as the overall relations between SH agriculture and the state (an issue also discussed as the 'urban bias'). The working and the effects of the markets are mediated by market-agencies. These can induce rules that are more, or less, favorable to SH agriculture. Thus the market might become object of collective action that aims at the introduction of more favourable rules.

Whatever the specific background, it will be clear that favourable exchange relations will strongly help SH agriculture in processes of capital formation and associated processes of development and growth. Unfavourable exchange relations will hamper such processes. In more general terms this first dimension reflects and summarizes the interaction between the SH farm and the economic environment in which it is embedded. Thus, this first factor synthesizes the risks and disincentives entailed in the economic context that have been discussed earlier.

The second dimension regards the total assets of the farm enterprise. The farm may be well endowed, or – the opposite situation – it may be marginal. A well-endowed farm can be far more productive than a farm having just a marginal set of resources, just as it can render a far better income and sustain – in the longer run - an ongoing process of capital formation. Whether this is the case, or not, depends again on the convergence of many variables that concern for example the quantity and quality of resources, the way they are combined, the ecology in which the farm is embedded, etc. In more general terms we could say that this dimension reflects the history of the farm enterprise, i.e. the way it has been able to develop a patrimony. It is also the dimension that clearly links with the persistent poverty and lack of resources, discussed before, as well as with emancipation from it.

The third dimension regards the institutional and policy context. Here gender institutions, class, agrarian structures, ethnic discrimination, repressive regimes, grass root organizations, property rights, agrarian and rural policies all may play a role. Such variables will interact in complex ways; sometimes they will mutually enforce each other; at other times and in other places there might be more balanced situations. At the extremes of this third dimension there are, on the positive side, smallholder farms that dispose of their own self-owned and self-governed resource base that allows for a degree of autonomy. The associated rights are fully recognized and endorsed. Smallholders are seen as important and respectable members of civil society. At the other extreme, the negative side, there are the highly dependent SH farms that hardly dispose of self-owned resources. They have to engage in dependency relations. Here smallholders are considered as redundant. Their rights are often not respected and their voice is weak. Their socio-economic relevance is neglected.

How are these three different dimensions affecting smallholder agriculture? Generally speaking they create, on the negative side, precariousness, which in turn translates into poverty, hunger and in the impossibility to produce. However, such precariousness and the subsequent paralysis do not result out from a mere addition of the three dimensions. It is specific forms of interaction and combination that produce the undesirable effects.

Figure 14: Representing diversity along three lines

Take for example endowments. A low level of endowments might bring a range of difficulties, but it does not amount, as such, to an impossible situation. Over the ages smallholders have faced and redressed resource marginality: through capital formation (mostly based on labor investments), enlargement, mostly in a step-by-step way, of their resource base. The same applies for example to the market dimension. Unfavorable market situations are not destructive *per se*. Having a well developed and self owned resource base, small holders were able to survive in difficult years, after which they could regenerate acceptable if not impressive growth levels. However, when the two dimensions interact, i.e. when for example, a negative market situation combines with marginal resource endowments, highly problematic situations arise. If in such a situation smallholders produce a certain amount, it is possible that they might not sell it or that they get very low prices. This implies that the relatively modest amount of resources can be lost. Coping with this situation by resorting to formal credit might be impossible, simply because the banks judge this situation to be barely profitable, too risky and/or entailing far too high transaction costs. However, it is also possible that the farmer refrains from applying for credit as the risk of losing the collateral (the land) is perceived as far too great. But even when credit can be obtained, it is possible that this induces a more extensive (i.e. less risky) way of farming, which runs counter to the general need to raise agricultural production.

Together, the three dimensions define eight ideal typical situations (in empirical reality there will be, of course, many in-between situations as well). This results in typical features that characterize smallholders. The point is that such features are not intrinsic – they are rather induced by the situation as defined by the three dimensions. The following textbox briefly summarizes the different *types* of smallholders and associated *types* of smallholder agriculture that thus emerge.

Box 9: Different types of smallholders according to the typology Assets Markets and Institutions

Assets	Markets	Institutions	Characterization / illustration
+	+	+	This is the ideal typical situation of smallholders of the yeoman type. They have well developed and well-balanced farms which are highly productive. The farms are family owned and entail considerable patrimony that has often been created by different generations. Even as a smallholder they can be very ' <i>well off</i> '. These farmers are able to engage in investments that go beyond the single farm. At the beginning of the 20 th century Nigerian cocoa farmers, for instance, financed by themselves the construction of bridges and roads.
+	+	-	This combination is associated with stagnation. SH appear to be 'traditional' and 'passive', they do not move forward, neither do they protest. There is a slowdown of investments. This situation might even provoke an outflow of capital. Possibly many SH engage in labor migration. This situation might provoke 'rightful resistance' as occurred in Vietnam for example and the Philippines
+	-	+	This pattern induces insecurity. SH's will refrain from investing, especially in further enlargement and improvements of the resource base. These SH farmers will probably very strongly diversify their productive activities. Pluriactivity is the rule rather than the exception. In extreme cases there will be de-activation in SH agriculture (whilst highly indebted farms will face bankruptcy).
+	-	-	Stagnation and insecurity. This situation has been characterized as 'structural involution'. Farmers will de-invest ('consume their own farm'). SH farmers appear to be, in this situation, ' <i>those who have no future</i> '. This situation may trigger a massive rural exodus. Widely spread throughout, but not limited to, the Latin American mountains. An historical reference can be found in 'The Grapes of Wrath' by John Steinbeck
-	+	+	A relatively favorable market situation and positive institutional and policy context allow poor smallholders to work hard, to produce and to engage in capital formation. Here SH typically emerge as <i>sturdy people working to improve their livelihood</i> and, especially, to contribute to the wellbeing of their children. The search for income improvement translates here into increasing agricultural production. This type is strongly present in today's China and Brazil, but not limited to them.
-	-	+	When these traits combine, it is probable that smallholder agriculture mainly features as being limited to <i>self consumption only</i> .
-	+	-	This is the situation of the 'rising expectations' that get frustrated due to political and institutional malfunctioning. It is here that criminality, violence and/or anarchic rural movements emerge. ' <i>Zapatistas</i> ' are, as much as ' <i>coca producers</i> ' a logo for this situation.
-	-	-	Here we may locate ' <i>les damnés de la terre</i> ' (Frantz Fanon). They are locked-out and even the possibilities to struggle in order to escape the situation of poverty, hunger and lack of prospects are lacking. This is the majority of the rural poor of today.

As argued before, within the three dimensional space represented in Figure 14 different forms of precariousness might be distinguished: Assets Markets and Institutions. The crucial point is that each form requires its own approach. The best way to tackle one form of precariousness is mostly inadequate or even counterproductive when it comes to tackling another form.

Related to the first dimension (especially when exchange relations are unfavorable) there is a panoply of interventions that might help to enlarge and improve the available resource base. Shortly summarized these are:

(a) Programs to help SH to build and/or extend a resource base. This occurs, for example through the construction of irrigation and drainage works, terracing, the upgrading of soil fertility, anti-erosion works, improvement of houses²⁴ and buildings, proper fencing, tree planting, the building-up of herds, etc. It is important that this works is done by smallholders. The works needs to be funded by the State²⁵, directly, or indirectly, i.e. through peasant communities, village committees, regional unions, etc.

(b) This approach can be extended to re-allotment schemes (meant to put dispersed fields together), the construction of roads, electrification, rural drinking water supply, etc.

(c) Once more resources are available, fine-tuning the resource combinations and searching for the best possible utilization of the resources become central. Here new forms of knowledge-sharing (or extension) such as the *campesino-a-campesino* approach that developed in Central America are paramount. The agro-ecological approach can further strengthen the fine-tuning, utilization and search for sustainability.

(d) In situations of extremely skewed patterns of land distribution, land reform programmes might be needed.

When it comes to the second dimension (markets and market-agencies) other interventions are needed to remediate the situation that blocks investments:

(e) Public procurement may result in the construction of market segments that are favourable for smallholders. A good example is the Brazilian national food purchase program PAA. Other initiatives elsewhere have been less successful. Hence, it is urgent to study the different experiences and obtain insight into the conditions needed to make such programs viable and effective.

(f) Through investments in physical infrastructure, the associated creation of regulatory space and support through extension services, new market segments might be created that are especially attractive to smallholders. Examples are the 'One Village One Product' schemes and the markets for Green products in China. The wide range of formalized IG products as well as informal 'regional' products in Europe is another example.

(g) Long term contracts between smallholder associations and global value chains (as currently practiced in, and limited to, the context of corporate social responsibility) might help to protect food industries and retail chains from the negative effects of price volatility, whilst they may give smallholders the means of improving their livelihood, increasing production and strengthening sustainability.

²⁴ Sometimes houses are thought to be outside the notion of productive investment (see...). This is a mistake. In the countryside houses are simultaneously places for drying and storing the harvest, safely keeping tools and instruments, receiving people and thus reproducing social capital. They are also places that allow farmers to be close to the fields, thus enabling surveillance.

²⁵ This might be justified by the synergy that is created in this way. On the one hand poverty is being alleviated by offering employment opportunities. On the other hand productive capacities are enlarged which translates in increased food production.

Regarding the third dimension it is paramount that interventions such as the following ones are considered:

(h) Wherever needed, access to formal credit is to be improved. Introducing some of the mechanisms that regulate informal credit into the banking circuits could be helpful.

(i) Research and development of agricultural technologies is to focus urgently on novel solutions that will function well within, and help to improve, smallholder agriculture.

(j) Forms of 'urban bias' are to be eliminated. The rights of smallholders to land, water, seeds, techniques, etc., are to be recognized. Smallholder organizations are to be recognized and accepted as major partners in the definition of agricultural and rural policies.

Several of these possible interventions will be discussed in more detail in the following sections.

5 RECOMMENDATIONS²⁶

5.1 Smallholder agriculture: the way ahead

At global level, smallholder agriculture contributes in a massive, indispensable and strategic way to food and nutrition security. Beyond this there is considerable potential to further enlarge this contribution. This contribution is multidimensional. The economic dimension regards actual and potential production capacity. The social dimension associates with poverty alleviation and reduction of social and spatial inequalities. The environmental dimension embraces issues as biodiversity, deforestation, climate change mitigation and water conservation. The political dimension includes the emancipation of neglected groups in society. On all these dimensions smallholder agriculture can further enlarge its contribution to societies, and it is very urgent to do so.

Depending on national situations linked to history of development pathways, smallholder agriculture is not the only way of organizing agriculture and these different ways have to be considered. In reality, they occupy space together with other types of farming organizations [large scale farming, corporations, agro-industries...], they may develop positive linkages, they may, sometimes, compete for resources of all kinds (natural resources but also policies).

However, the actual and potential contributions of smallholders are generally poorly understood and they have been too frequently neglected in policy and public investment. Hence, there is an urgent **need** for greater attention to investment in smallholder agriculture.

Given the current and projected context of high food prices, concerns with improved food security, demands for social protection, and concerns with environmental degradation, there are opportunities to more successfully invest public resources in smallholder farming, thus supporting the investments by smallholders themselves in their sources of livelihood. Hence, there is an as yet unused **opportunity** to invest in smallholder for development (growth, poverty reduction and food security improvement, basic needs, and environmental services and sustainability)

Investing in smallholder is a complex proposal as it requires a **coordinated strategy** across sectors, time, and space. As a consequence, it requires development of a national smallholder development program that is country specific, comprehensive, and broadly owned.

Implementation of this program needs **political support**. The smallholder stakeholders are the most effective source of support. As they are typically under-represented in national political platforms, enhanced representation is an important contribution to success.

Therefore, we define five recommendations to directly address the constraints to smallholders' investment in agriculture (1.2.) and four strategic recommendations domains towards implementation (1.3)

²⁶ Note: The current V0 draft contains, intentionally, very first tentative recommendations : these are to be seen NOT as the final recommendations of the HLPE, but as a work-in-progress, part of the process of their elaboration: it is therefore to be seen as a *scientific and evidence-based invitation* for their enrichment, for being screened against evidence, as well as for further suggestions on their operationalization and targeting.

5.2 Reducing the constraints that impede smallholder investment

5.2.1 Access to rights: smallholders' family needs for well-being

Fulfilling their basic needs is essential for smallholders to be able to invest. They mostly do so through their own labor, so the first asset to strengthen and develop is the wellbeing and quality of life of smallholders, especially women and children. It is a crucial prerequisite for investments in smallholder agriculture. Here public investments and the role of NGOs are strategic. Public health, provision of basic public goods (as safe drinking water, sanitation and electricity, education), collective goods such as school food provision through specific smallholders' oriented procurements, as well as social protection schemes including cash transfers, insurances and retirement schemes can indirectly have an important effect on investments, by improving the everyday wellbeing and hence keeping the family in good health.

Figure 15: Improving the well-being of smallholder families: a prerequisite for investment



5.2.2 Improving productivity and resilience

The further improvement of **productivity and resilience** remains to be of utmost importance. Here it is strategic that agricultural research and technology development are far more oriented at the real situation (and the possibilities and limitations it entails) of smallholders. Resilience is to be considered both at domestic [increased food provision] and technical levels to reduce the natural risks.

5.2.2.1 Broad technical orientations

There are numerous ways of increasing agricultural productivity and the yields gap between already available genetic material and their performance at farm level indicates that progress is possible with targeted and accessible investments. Increased production will need to go along with investments to enlarge the resource base of smallholders through landscape management (payments for environmental services that combine with productive goals, reducing variability of yields).

If increasing main crops' productivity is to be one central objective, improving qualitatively and quantitatively the families' nutrition and diets has to be equally important. Strengthening smallholders' capacities to develop subsistence oriented productions²⁷, diversifying and enriching family's consumptions should be part of coordinated strategies including improperly called "secondary crops", short term cycles animals raising, milk and fruits production in "house gardening types" production

²⁷ We do not mean going "back" so some kind of autarkic economy, we mean adding a "subsistence component to social and economic policies targeted to the most vulnerable, see Alain De Janvry and Elisabeth Sadoulet, 'Subsistence Farming as a Safety Net for Food-Price Shocks', *Development in Practice*, 21/4-5 (2011), 472-80.

units close to home. These products may also – if surplus is there – enter in local and regional markets.

Diversification of the production systems to improve self-provision is needed to improve the quality of nutrition and strengthen the diversification of diets. Specific programs would be needed to enhance self provision as a primary goal and possible surplus. A small stock with short reproductive cycles, milk production, diversified gardens with legumes and fruit production around houses are seen as possible interventions combining social welfare objectives (food security and nutrition) and economic objectives. While there is a general agreement on this option few empirical and validated results are available that might show evidence of the improvement in children's nutritional status in programs targeting the production of more diversified diets among smallholders [Masset et al., 2011].

Specific attention is to be paid to the strengthening of the food and nutritional basis of smallholders not in the narrow sense of self provision but at the same time to improve the nutritional status of the families and to provide option to market surpluses. The case of cassava development [Nweke et al., 2002] is an example of a low demanding plant suitable to rather poor environments and able to meet urban market needs in a variety of processed products. Research achievements make it yet more attractive for resource poor smallholders (see [Herren, 1980] for mealybug control and Nweke 2009) for a global overview of the research and development achievements). Other products (fruits, legumes...) have a wide potential to diversify and improve every day diets [Subramanyan and al., 2009]

For smallholder agriculture, cost reduction technologies may prove highly profitable and therefore need a specific attention especially because they often need an increased knowledge base (agro-ecology, conservation agriculture...), they may also require “investments” – even if reduced, it may be high for smallholders – in land, labor, or even financial resource that will not produce returns in the very short run. For these technologies, despite their multiple advantages and perspectives to renew agronomic thinking very few show rapid and wide diffusion among smallholders [Giller et al., 2009].

One must recognize that “agro-ecological” practices are at the same time knowledge intensive and very site specific [Tittonell et al., 2007], and smallholders face high level of constraints that do not allow full adoption of the technical package [Villemaine et al., 2012] as it was the case with “conventional” intensification recommendations [Yung et al., 1992]. Labor saving techniques, low cost inputs, and simplification of practices are most likely to be widely adopted rather than those requiring more labor intensive options.

Access to inputs has to be facilitated when necessary while avoiding excessive external dependency. Far more attention is to be given to transport facilities that fit in the smallholder situation, as well as to processing technologies that might be connected to, or integrated in, smallholder agriculture.

Box 10: Closing the yields gaps²⁸ and challenging diversity of agro ecological conditions²⁹

Grain yields generally fluctuate between 25% and 50% of potential yields. Best farmers' yields tend to underestimate the actual potential yields. Simple crop simulation models provide a more accurate estimation of potential yield. Soil fertility and weed management are the predominant causes of yield gaps. Great potential exists for closing the yield gap by improving agronomic practices and targeted investments.

²⁸ Affholder F. Et Al., 'The Yield Gap of Major Food Crops in Family Agriculture in the Tropics: Assessment and Analysis through Field Surveys and Modelling', *Field Crops Research*, (2012 (in press)).

²⁹ P. Tittonell et al., 'Heterogeneity of Crop Productivity and Resource Use Efficiency within Smallholder Kenyan Farms: Soil Fertility Gradients or Management Intensity Gradients?', *Agricultural Systems*, 94/2 (2007), 376-90.

In dry areas like Senegal, it should be possible to double the actual mean yields combining improved soil fertility and weed management with water saving investments and techniques at field and landscape level in order to reduce production risks induced by rainfall variability, which are expected to increase with crop intensification. For rainfed rice cultivation in Viet-Nam, and with new varieties of rice and with the same kind of investments and technical improvements, it seems possible to harvest four times the current yields.

In Brazilian Cerrados, on maize, it should be possible to progress and reach 5t/ha if investments are made to increase soil organic matter, together with water harvesting techniques, avoiding water run-off through mulching and conventional landscapes management techniques, and using relay plants to reduce nitrogen losses through lixiviation.

The main condition for such progress is fine tuning such broad recommendations to the wide diversity of agro ecological conditions.

Reduce the drudgery of agricultural work through adapted physical capital investments has rarely been high in the research agenda. One has to figure that in most cases smallholders' work is hand work with limited access to tools. When possible, these tools or equipment are not always able to reduce the drudgery of agricultural work. This is nevertheless a real concern that divert young people from earning their living in agriculture, this explains also why motorization has had such an impact in developed countries and if tractor is mainly seen for plowing, tractor is also the mechanical arm of "modern" farmers to clean stables, to transport organic matter to improve soil fertility; to do work on demand, etc. Many options are currently available and Asia is a reference regarding small scale equipment for smallholders. But this view is to be enlarged since smallholder through collective action can manage large scale modern equipment used by large numbers or providing services to many.

There can be several ways to increase and keep more value added at holding and territorial level. First is the recognition that producing "commodities" is often threatened by unfair competition on internal markets. The share of value retained at holding level may become poor under adverse market conditions. When possible, qualifying products through specific processing is a valuable option to differentiate and escape from "commodity" competition and add value to the product. Unlike some false representations these markets are not niche markets; they tend to represent large part of the smallholders, up to 20% in France for instance³⁰. The existence of identity relations between human and natural resources through specific know how for production and processing in the territories plays a key role in the emergence of these alternatives, where smallholder production has a comparative advantage and can mobilize cooperative networks linked to proximity, assets' specificities and external territorial linkages to access markets [Perrier-Cornet, 2009].

5.2.2.2 Increasing access to investments and capacity to invest

This recommendation has strong policy implications for several stakeholders and specifically for financing and banking system and governments.

The credit scarcity for smallholders must have an end: innovative schemes are of highest priority and it should be possible to draw lessons from long enduring cooperative systems when they build upon solidarity values and ties. However this is not obvious since the record of failures might be higher than success stories in Southern countries.

³⁰ Bonneuil C. et al., 'Innover Autrement ? La Recherche Face À L'avènement D'un Nouveau Régime De Production Et De Régulation Des Savoirs En Génétique Végétale.', *Les Dossiers de l'environnement de l'Inra.*, 30/Quelles variétés et semences pour des agricultures paysannes durables ? P. Gasselien, O. Clément, eds (2006), 186 p.

Box 11: Cooperative banking: the Rabobank, old lessons, new prospects³¹

As one of the responses to the deep agrarian crisis of the 1880s, farmers created, throughout the Netherlands, a dense web of cooperative banks. These were initially small banks, operating at the level of the village and sometimes supported by the clergy and/or local intellectuals (like e.g. teachers). Although small, these local banks played a strategic role in the recovery of Dutch agriculture and in the boom that followed later.

The local banks merged and the Rabobank is now a solid bank that operates internationally. It remains to be a cooperative. During the recent crisis this proved to be an important advantage. The Rabobank finances many farms and food industries. Its operations are distinctive when compared to stock market related banks.

Rabobank Group currently runs many programs in developing countries and assists in the development of new, co-operative banking schemes. One of the aims is to “correct or mitigate the negative impact of market failures for the benefit of the members [of these co-operatives]” (Rabobank, 2012a, p.7). Rabobank also refers to co-operatives as “key for smallholder inclusion into value chains” (2012b). A framework for an inclusive food strategy has been developed.

Research and extension for development have to give the highest priority to smallholder agriculture

For the most vulnerable households, access to improved seed and fertilizer should be increased through subsidy as well as combined with social protection through safety nets to reduce the pressure on domestic budgets

5.2.3 Strengthening the institutional capacity of smallholders

It would be unrealistic to ignore smallholders’ organizations – in the diverse way they structure and organize - since they play an increasingly important role in three main areas:

- to rebuild services adapted to the needs and resources of smallholders and especially the poorest of them;
- to increase their market power including strengthening their bargaining power with other economic actors;
- to influence the decision making process at the local, national, sub-regional and international levels, in particular in order to promote agricultural and rural policies that take into account the specificities of smallholder agriculture their role in challenging poverty.

But the way rural smallholders organize goes beyond agricultural related issues. They also organize to cooperate for social matters that require collective action sometimes to cope with “missing State” in education, health or provision of basic services. They organize also in diverse ways, the most common and known being self help groups.

The frontiers are some time not clearly defined between agricultural oriented organizations and social oriented one and this is not contradictory with efficiency, it corresponds to the way people own the organization.

³¹ Rabobank Group, ' Co-Operatives: A Key for Smallholder Inclusion into Value Chains, a Framework for an Inclusive Food Strategy', (Utrecht, 2012b), Rabobank Group, 'Cooperatives and Rural Financial Development: Great Opportunities and Surmountable Difficulties', (Utrecht, 2012a).

In all these “productive and social” areas, the grouping of smallholders in organizations is at the origin of countless initiatives throughout the world and numerous successes. Making possible collective action, it allows the effect of exceeding the constraints of (1) production is scattered in small units and (2) the very limited capabilities of each rural holding to significantly improve its conditions of production and livelihood and to have his voice heard.

The results obtained by these organizations are certainly still variable, they represent however a major step forward and many examples show that collective action strengthens confidence in their own potential and facilitates controlled changes that are needed in rural areas.

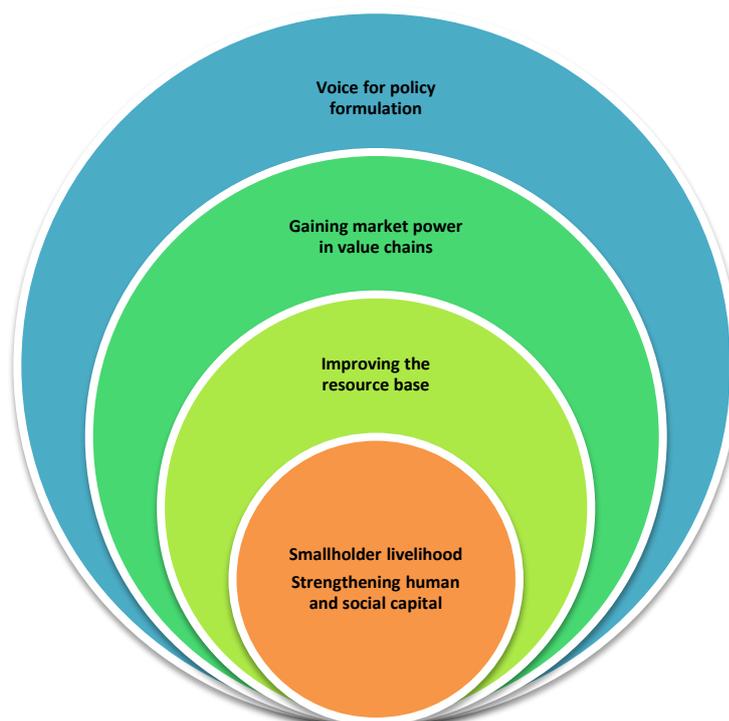
However, smallholders’ organizations usually lack capacity and experience to organize in effective way. Therefore, in supporting these organizations, governments, NGO and development oriented organizations need to play catalytic role until these organizations became mature [Diaz et al., 2004].

The social and political recognition of smallholders as a « professional status » - multipurpose enterprise type - within the society is a condition for change – not a sufficient one but a necessary one [depending of national contexts and openness, CSO can play an advocacy role]

Strengthening the collective voice of smallholders at various levels remains high on the agenda to improve investments capacities; the organizations themselves have to consider investments to serve their members within a market led economy. They will need support.

Like in natural environments diversity is the main characteristic of the social organization of collective action. Observations of on-going trends show no blueprint for organizing smallholders as it was in the past where the cooperative model was dominant. Pragmatic approaches recommend designing organizations accordingly to the problem that is to be solved in order to combine efficiency and gain confidence of the members. Multipurpose organizations are often the preferred pathway for smallholders since like at household level productive need and social needs are interconnected although governments and agencies will argue for specialization [Bosc et al., 2001]. In all cases support in the long run is a key factor to build a strong smallholder collective voice [Bingen, 1998].

Figure 16: Strengthening the voice of smallholders to enhance collective action at various levels and domains



Invest in **forward thinking for tomorrow agriculture** would help to shape new perspectives for youth to invest into this professional perspective. Job creation is a challenge linked to knowledge intensive agriculture.

5.2.4 Reducing economic risks and improving the investment environment

Market failures have to be addressed in order to reduce uncertainty and investments in physical capital [collective and public] are needed to improve market efficiency.

Price stabilization is needed to define clear conditions for investments (season) and in the medium term

Safety nets for the most vulnerable should be part of the possible solutions until prices stabilize and if market failures remain.

Bridging the gap between finance and smallholders to improve access to credit and conditions favoring long term investments at low rates

Agro-industries and retail chains need to invest for smallholders' development including strengthening their collective capacities.

Research is asked (i) to improve the knowledge base on the majority of producers in order to better shape investments (ii) to invest in knowledge intensive techniques

Public goods at territorial level aimed at improving the well-being, health and access to education and other basic services

5.3 Specific priority domains

Three domains are strategic if smallholder agriculture has to be developed:

- To invest in agriculture, smallholders need access to financial resources under favorable conditions that makes investment profitable for them. Today only a very limited share of the smallholder population has access to financial and banking services.
- Market access is a key issue recognizing the different natures of the markets smallholders are part of. To invest smallholders need a secure investment climate and stabilized if not guaranteed prices or minimum prices. Despite the advance of modern agrifood value chains dominated by large retail and processing firms, it is still the case that the vast majority of smallholders across the developing world continue to operate in traditional markets; these are integrated in networks that go from local village markets to regional (sub-national) to national wholesale and retail markets. These markets very often suffer from serious limitations and imperfections that limit competition and transparency, resulting in very high transaction costs and barriers to smallholders. Developing and perfecting the traditional wholesale and retail markets, from the local to the national levels, is a top priority to create a favorable environment for greater investment in smallholder agriculture.
- Major players such as agro-industries and retail chains are also concerned with the development of smallholder agriculture first to get quality and quantity products either to process or to retail. To meet their requirements smallholders often need to improve and upgrade their ways of farming in order to cope with standards requirements. Smallholders can

benefit from contractual arrangements if they go beyond the sole contract and engage into a collaborative process in which each contracting party defend its own interests. Among others dimensions, collective action has to be first priority for smallholders due to huge asymmetric market power. Agricultural extension or advisory services, public quality standards and third party certification schemes, and effective and fair enforcement of contracts, are examples of public services that are often missing or are quite limited in scope, quality and effectiveness; the gaps in these public services seriously affect the ability of smallholders to participate in commercial arrangements with modern wholesalers, retailers, and agro-processors.

- Then, like in any country were agricultural markets and smallholders have shown long term growth and development, this will not be possible without providing the necessary public goods including institutions and regulations that make possible the functioning of markets. Investment in rural roads and in telecommunication are two forms of investments that when missing severely affect both the development and functioning of agricultural markets and the participation of smallholders in them.

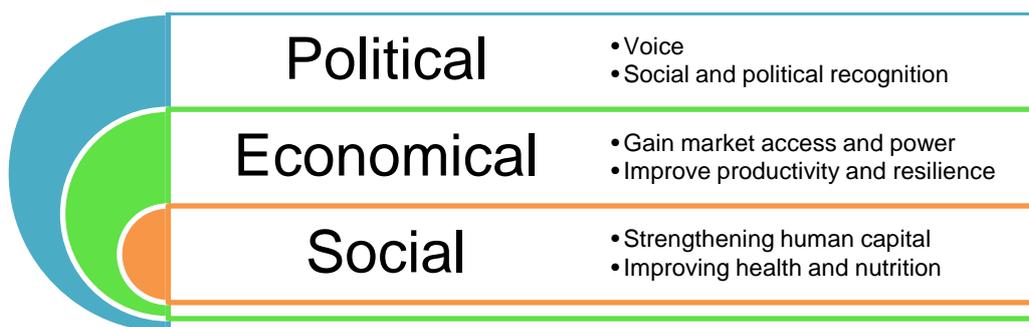
Figure 17: Three strategic domains to promote smallholder investment



For each of these domains “access” is a key word since poverty resulting in poor assets, lack of recognition and low opportunities limit smallholder access to productive resources.

Developing “access” starts with access to social, economical and political rights, but all other access are equally important if the objective is to develop a vibrant smallholder economy.

Figure 18: Embeddedness of political, economical and social rights



5.3.1 Finance and banking system

5.3.1 Finance and banking system

Firstly, the form of banking and financing system directly impacts on investment in smallholder agriculture. Among different types of investors in smallholder agriculture, such as public, private, co-operatives, individuals and so on, it is individual smallholders who suffer the most for accessing to financial services.

They need basic financial services for saving their incomes, making loans for investment in agriculture and/or livelihood, carrying insurance against weather risk etc. These financial services, however, are provided insufficiently or sometimes completely out of reach in rural areas because of lack of financial institutions' networks in those areas. Even if there are financial service networks in rural areas, smallholders have not enough credit rating or guarantee, especially for medium-long term loans. If they could luckily have loans, high interest rate and heavy repayment can push them to get out of farming.

On the other hand, financial institutions, especially commercial banks have been seeking their potential borrowers. Under economic crisis, the agricultural sector emerged as an attractive domain of investment which allows them to make stable profit. The expected food shortage in near future also encourages these institutions to invest in agricultural sector. In this context, a number of smallholders can be considered as a huge potential market for them.

It is an important challenge to link these smallholders in shortage of financial services and these financial institutions looking for investment opportunities. What are the new and innovative institutional arrangements for connecting them in order to support smallholders in fighting against poverty, food insecurity and getting sustainable livelihood?

Secondly, after the financial crisis in 2008 regulations of financial market are now in agenda to make it more transparent and contributory to world food security [HLPE, 2011] (G20 2011). Speculation in agricultural commodity derivatives market exacerbates price volatility and prevents most vulnerable smallholders' from investing. What are possible solutions to reform financial market in order to remove these risks from smallholders and encourage their investment?

We illustrate main constraints on smallholders' investment by category of actors.

1) Public financial institutions, such as agricultural development banks are created for the purpose of increasing agricultural investment. However smallholders have been neglected for long time in agricultural policy in many countries since they have been considered as "obstacles" to modernization of agriculture or holders getting out of screen by polarization into large-sized farmers or urban workers. Even when public financial services were available for smallholders, they failed because of mismanagement and poor capacity to develop decentralized services [Mahieux et al., 2011]. These public institutions have often been often privatized or simply closed within the structural adjustment policies and have not been replaced by private financial services. Generally, private financial institutions have proven less coverage than public financial institutions [Adesina et al., 2011]

2) In the private sector, commercial banks keep ample funds therefore ability to finance smallholders with important amount of capital. However, these private banks have weak incentives to expand their service networks in rural areas because of low level of income, lack of scale economies and poor infrastructure [Mahieux et al., 2011]. Even if they have these networks, smallholders have been out of financing target as usually they do not have enough credit ratings and guarantees to access to financial services. As private institutions, commercial banks pursue short-term profitability. The high

transaction cost to accommodating numerous rural smallholders also disturbs their initiatives to develop financial services for smallholders.

3) Micro-credit institutions are positioned as an alternative to commercial banks who cannot deliver appropriate financial services for smallholders. However, micro-finance does not have as much success in agricultural investment as in other income generating economic activities (Oxfam 2009, and Box 6: Micro finance institutions and investments). Their financial services are limited in rural areas and especially for women and marginalized social groups. Too small loan size and prohibitively high interest rate are also imposed as barriers against smallholders' investment [Adesina et al., 2011].

4) In some countries agricultural cooperatives' banks have been well developed for the purpose of making smallholders investing in their activities. These cooperative institutions played important role for collective savings and collective purchase of agricultural input such as seed and machinery etc. However, the rapid development of cooperative financial systems led concurrence in financial market with other commercial banks. The concurrence made these cooperative institutions pushing smallholders to overinvest and even to get out of farming.

5) In most rural areas where formal financial services are not available or enough for smallholders, informal financial services have traditionally contributed to their investing in risk-sharing way. For instance, while a smallholder brings land and labor force into the process of production, the other provides informal credit (or pays for the required seeds, fertilizer and diesel etc.). When it comes to the harvest, the total production is divided in two parts (this defined proportion at the beginning of contract is variable but often 50-50) for each. Although this form of transaction functions well and protects smallholders from land losing risks, it needs to be more secured in case of harvest-failure.

What could be possible new institutional arrangements for these constraints? Given the important role of smallholders, it is clear that smallholders now need to be focused as target of policy supports and beneficiary of financial services to help their sustainable development. As institutional arrangements bridging smallholders' needs and financial institutions' opportunities, we recommend to develop partnerships between public, private, cooperatives and community based institutions.

By offering public guarantees to private financial institutions in smallholders' investment, governments or public financing institutions can encourage private financial institutions to develop financial services adequate for small-sized investment while sharing their burden to finance them. Acceptance of interest payment by governments can also orient private institutions toward micro-finance services suitable for smallholders. Those public commitments will assist to develop new packages of financial services with lower interest rate and longer term of lending for smallholders, particularly for women, youth and marginalized social groups.

Cooperatives or smallholders groups can cooperate with public and private financial institutions in mobilization of smallholders to have better education on financial services as well as effective investments and risk management. Those initiatives from smallholders' cooperatives and groups will be also crucial and useful for achieving financial services and expanding their investment.

Informal financial systems need to be more institutionalized and linked to formal financial systems. Basing on local relations of trust (social capital), smallholders can organize their common funds to accumulate their savings and collectively invest in their agriculture. These funds could also be supported by private financial institutions with public guarantees. Given the existing informal networks in rural areas, this community based solution would have a high potential for smallholders to achieve appropriate financial services.

We should also refer to a growing financial arrangement through a value-chain approach [Jessop et al., 2012]; [FAO, 2012]. This approach makes use of the transaction-based relationships among actors in value-chain such as input suppliers, smallholders, processors, retailers and consumers. While these vertically coordinated actors can receive financial services from external financial institutions, they can

also organize themselves to accommodate loans between them and to improve their capacity on financial literacy, for instance. We can find different types of value-chain approach, such as contract farming and warehouse receipt finance etc. Usually credit is guaranteed by the anticipated sale of the crop in the future. Value-chain approach which are well adopted for export crops and linked with governmental development banks, can be oriented to local food staples to improve food security conditions.

Finally, new institutional arrangements and a range of financial services, such as savings, credit, leasing, remittances and insurance have to be developed more for poverty reduction and food security of smallholders. States and international institutions have responsibilities to observe and regulate financial institutions for realizing these objectives. They may give incentives to financial institutions to dedicate a certain percentage of their lending capabilities to funds for smallholders and institutionalize pension and retirement allowance schemes for smallholders in countries with lack of those social securities.

5.3.2 Markets

The following are top priorities in terms of market-related investments.

5.3.2.1 Developing traditional wholesale and retail food markets

These markets are strategic from local level to national and regional level within economic integration frameworks, provided that the rules of the game are favoring smallholder agriculture.

The vast majority of smallholders in the developing world sell the bulk of their surplus production on traditional food markets. These traditional food markets include a large array of actors from the small intermediary that buys food products from small farmers at the village level, to the wholesale markets, street vendors and informal retail markets in the urban centers of the developing world. Despite the preference of many multilateral and bilateral development agencies and even of national governments to prioritize modern for-export value chains, it is the case that the development and modernization of these markets offer the best opportunity to improve the participation in markets (opportunity and outcome, access and profits) of most smallholders in the developing world.

These markets are very incomplete and imperfect, meaning that they are quite opaque, competition in them is very limited and agreements are difficult to enforce for the smaller players. Smallholders frequently face very high transaction costs in these markets and enter into spot or systematic transactions from very weak positions and without any recourse to the protection of formal norms and institutions and authorities.

To improve the investment climate for smallholders, it is necessary to channel public and private investments in the development and modernization of traditional markets. Downstream, near the consumer end, it is necessary to modernize urban wholesale and retail food markets in intermediate and large cities. This includes investments in infrastructure (storage, cold storage, electricity, clean water, pavement, access, bank branches, regulated weights and measures), but also in the modern management of the markets themselves, and, last but not least, in rules such as quality grades and standards and weights and measures that are effectively enforced by public officials. Upstream, at the farm level, training, market information, business advisory services and producers' organizations, are critical for traditional markets to function better. The scope and performance of these markets is also limited by missing critical public and/or private investments, of which rural roads and telecommunication networks are the most important.

5.3.2.2 Contract agriculture

Contract agriculture offers important opportunities for a growing number of smallholders in dozens of developing countries. Contract agriculture typically involves a processing firm or a wholesaler (for domestic or the export markets), and a few hundred to a few thousand producers. There is plenty of evidence that smallholders that participate in contract agriculture gain different types of benefits (that may include lower risk through greater predictability and lower volatility of prices, training and technical assistance, finance, access to inputs and specialized machinery services, and sometimes investments in irrigation, greenhouses, storage facilities, and, sometimes, higher net profits per unit of product sold). At the same time, only a very small proportion of smallholders ever have the opportunity to participate in contract arrangements, because they lack resources that are seen as indispensable by the buyer (e.g., irrigation, ready access to a good road) or because the fixed and indirect costs of buying from small quantities from each of many smallholders are almost always much higher than buying larger quantities from a small number of medium or large producers.

Investments that can facilitate the access of a greater number of smallholders to this type of markets, include: (a) enhancing the resource base of smallholders with targeted investments in the types of access looked for by buyers (e.g. irrigation, good rural roads); (b) establishing third party technical assistance services and certification schemes; (c) supporting the development of efficient producers' organizations that can be seen by the buyers as trusted business partners that will deliver the agreed upon quantities and qualities of produce; (d) directly establishing subsidized public programs to promote contract agriculture by covering the direct costs of establishing a commercial relationship and getting it developed to a point where the private parties (producers and buyers) can alone assume all costs.

5.3.2.3 Modern retail markets

Modern retail systems are acquiring a growing and sometimes dominant position in national agrifood markets. In the OECD countries, these types of markets have dominated the trade of food for several decades. The evidence so far is that vast numbers of smallholders are excluded from participating in these markets in the developing world, as a result of the particular institutional and organizational characteristics imposed by the dominant large and often multinational retail firms, and their technological, managerial and financial consequences. On the other hand, those smallholders that do get included in these markets, tend to gain important benefits (profits, risk, technology, financial services).

The way to improve the environment for smallholders in these modern retail markets is a combination of the types of investments highlighted in the previous two sections on traditional markets and on contract agriculture. This is so because very few smallholders gain access to modern retailers directly. Rather, in the majority of cases smallholders access through the intermediation of dedicated and specialized wholesalers (that bridge the modern retail and the traditional food markets) or of specialized intermediaries (sometimes subsidiaries or branches of the retail firm) that engage in contract agriculture on behalf of a modern retail firm.

5.3.3 Public policies to strengthen smallholder agriculture

To ensure adequate access to resources by smallholders and ensure a well functioning and behaving markets and market-agencies that can benefit smallholder agriculture, good policy design must be in place to facilitate the process. At the same time, there need to be and innovative institutional settings to create an enabling environment.

Figure 19: Public policies to strengthen smallholder agriculture



In particular, principles and regulations to ensure smallholders to have the opportunity and capacity to participate in social as well as political debates and to better voice for their interests need to be formulated. These can include both financial as well as intellectual supports to the formation of farmer organizations or self-help groups where individual smallholders were to weak to make their own representations in different forums. Legislative rules could be formed on whether a certain percentage of political representation needed to be given not only based on ethnical, gender or religious groups but specifically to smallholder farmers within different levels of political bodies (local, regional, national and etc.). At the same time, create an enabling environment for NGOs or it's likes who can actively lobby for the interests of smallholder farmers.

Policies and institutions need to be in place to specifically take care of the interests of smallholders to ensure adequate access to properties, resources, credits and also to protect their often relatively insecure rights if any, such as land and water which are crucial to small farm production. Taking land right as an example, the right itself can be so heterogonous, sometime unclear across country and communities. Often when market exchange takes place, smallholders would not be in the best position to bargain with big players or multi-nationals due to imperfect information. Therefore, certain market regulations set as policy also need to be in place to ensure a fair share of market exchange by smallholder farmers.

Policies in favor of providing good public goods and services (healthcare, education, roads, irrigation, drinking water and etc.) to smallholder farmers can be very effective in strengthening smallholders' own capacity. Often, public goods and services for rural people, especially to smallholders are lagging far behind the urban people. Thus, providing better services to smallholders would enable them to better invest not only in farming but also non-farm activities which can bring remittances home to better invest in agriculture.

5.4 Implementation through national and territorial strategies for food and nutrition security

5.4.1 National level: a strategy for smallholder agriculture investment

At the national level, a ***National Smallholder Vision and Strategic Framework*** is to be elaborated that is country specific, comprehensive, and broadly owned. Smallholders and their organizations are to have an important role and voice in the elaboration of such a program. The program proposes how to tackle the specific constraints that smallholder agriculture is suffering.

The National Vision and Strategic Framework has to consider **the different ways agriculture is structured and the different types of holdings** ranging from smallholder agriculture to more structured and consolidated family farming structures up to corporations and agro-industries. This may result in bimodal structure like in countries like Brazil, or in unimodal type like Viet-Nam or Mali for instance. Even, in case of a unimodal structure type, **diversity is to be accounted for**, since smallholder agriculture present a high level of heterogeneity.

The recommendations are framed around **the typology** designed to represent the diversity of conditions that constraint smallholder agriculture: **Assets, Markets and Institutions**. Our recommendations follow these lines according to adequate geographical and institutional level

5.4.2 Implementation at territorial level

The territory is an area of land occupied and appropriated by a social group. It usually depends on a political and administrative authority. The territory is a functional unit usually comprising several districts or municipalities, which contains a high frequency of the social and economic interactions of those that live there. Very often it does not coincide with an administrative unit but is rather a functional aggregate of several of them. A territory has been defined as a rural space with a socially constructed identity. It can be considered as an acceptable compromise to design and implement interventions to improve food and nutrition security.

The choice of a territorial approach is not ideological or theoretical, but rather a pragmatic recognition of the diversity of natural endowments between more and less favorable settings, the infrastructures, structures and institutions including forms of collective action that differ geographically [J. Berdegue et al., 2012]. Several arguments justify the choice of such operational level for policy design and implementation within a national strategy and framework. First reason is the need to consider sub national specificities, potentials and limitations instead of “one size fits all” theoretical policy choices. Second is the recognition that macro and sectoral policies need to exist in a differentiated and integrated form – according to the potentials and needs of each sub national territory. Third and foremost from the perspective of the topic addressed in this paper, is that the different forms of investments discussed above, can have the best results and impacts if they are coordinated rather than each of them being designed and supported as a self-standing and totally independent policy. Territorial development plans offer a reasonable space and platform for such coordination, in contrast to the local community that is often too small a unit (and too many in number), or the sub-national regions that are too large and internally highly heterogeneous.

CONCLUSIONS

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