

Producers' Collectives in Sustainable Agri-value Chain¹

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Abstract

This paper explains the various determinants of sustainable agri value chain in the Indian context of increasingly small holder agriculture. This paper highlights the importance of producers' collective and suggests that pro-producer agriculture value chain can provide a way for poverty reduction and social development. This paper outlines the comprehensive role of agri producers' collective in agri value chain in improving its various components i.e. various agricultural practices; post harvest losses in agri- business activities; producers' collectives including ecosystem service agendas. A brief literature review has been summarized focusing on issues and challenges faced by small holder farmers in India. Authors explain the option to study agri value chain based on dominance by different members of the value chain. The paper suggests that opportunity for producers' collectives to significantly contribute the sustainable agri value chain.

Keywords: Producers' collective, sustainable growth, agri- value chain, governance mechanism.

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1. Introduction

Multi-functional Role of Agriculture is becoming the driving force for the country sustainable growth, because the farming systems provide the base for easy delivery of environmental and socio-cultural benefits. Seventy-five percent of the world's poor live in rural areas and depend on agriculture as their primary source of income. Given the World Bank's estimate that economic growth in the agricultural sector is twice as effective in reducing poverty as growth in other sectors of the economy. Hence, the implementation of drivers such as sustainable farming practices, adopting the post-harvest agri-business activities downstream and, through collective action, certainly increment in economic growth will be significantly noticeable. Strengthening agricultural value chains may be among the most effective ways to address global poverty⁴. The present article therefore emphasis on the rural livelihood enhancement through the intervention of agricultural value chains to bring about the meaningful approach for poverty reduction, environmental stewardship and efficient primary production.

2. Small holding farmers

A conventional definition of smallholders as farmers with less than 2 hectare plots allows the estimation of the phenomenon of small farms at over 525 million (IFPRI, 2005) globally, hosting approximately 2 billion people (Hazell, 2011). Smallholder farming is a phenomenon characterized by a wide spectrum of conditions across the rural developing world. The land holdings in India are highly fragmented, scattered and heterogeneous. The pressure on limited arable land is increasing with increase in population. This is reflected with increase in number of land holdings by 83.31% in 35 years from 1970-71 to 2005-06 and decrease in size of holdings by 46.52% from 2.3 ha to 1.23 ha for the same period (Table 1).

Beyond the differing farm sizes, the heterogeneity is also apparent in a) farming attitude (subsistence, commercial), b) existing land tenure regimes, and c) the presence or absence of other non-agricultural income and employment sources for the smallholder family members.

Asia smallholding farms constitute 87%, Africa 8% while the rest 5% are located in Europe and America (Chand et al., 2011). In Asia, India stands second in smallholdings after China due to highly fragmented, scattered and heterogeneous land holdings. Presently, 63% farm holdings are below 1 ha while over 86 percent of holdings are less than 2 ha accounting for nearly 49% of the operated area (APCAS, 2010). The pressure on limited arable land is

⁴ The World Bank, "World Development Report 2008" (Washington, DC: World Bank Group, 2007).

increasing with the diversion of agricultural lands into non agricultural domains due to urbanization and increasing population (Fig 1).

Table 1 Number and Area of Operational Holdings in India from 1970-71 to 2005-06

| Category of Holdings | Number of Operational Holdings (in '000) | | | | | Area Operated (in 000 ha) & Average (in ha) | | | | |
|--------------------------------|--|-----------------|-----------------|------------------|------------------|---|--------------------------|--------------------------|---------------------------|---------------------------|
| | 1970-71 | 1980-81 | 1990-91 | 2000-01 | 2005-06 | 1970-71 | 1980-81 | 1990-91 | 2000-01 | 2005-06 |
| Marginal (Less than 1 hectare) | 35682 [50.6] | 50122 [56.4] | 63389 [59.4] | 75407 [62.88] | 83694 [64.77] | 14545 [9.0] 0.41 | 19735 [12.0] 0.39 | 24894 [15.0] 0.39 | 29814 [18.70] 0.40 | 32025 [20.23] 0.23 |
| Small 1-2 hectares | 13432 [19.1] | 16072 [18.1] | 20092 [18.8] | 22694 [18.92] | 23929 [18.52] | 19282 [11.9] 1.44 | 23169 [14.1] 1.44 | 28827 [17.4] 1.43 | 32139 [20.16] 1.42 | 33100 [20.91] 1.38 |
| Semi medium 2-4 hectares | 10681 [15.2] | 12455 [14.0] | 13923 [13.1] | 14020 [11.69] | 14127 [10.93] | 29999 [18.4] 2.81 | 34645 [21.2] 2.78 | 38375 [23.2] 2.76 | 38193 [23.96] 2.72 | 37897 [23.94] 2.36 |
| Medium 4-10 hectares | 7932 [11.3] | 8068 [9.1] | 7580 [7.1] | 6577 [5.48] | 6375 [4.93] | 48234 [29.8] 6.08 | 48543 [29.6] 6.02 | 44752 [27.1] 5.9 | 38216 [23.97] 5.81 | 36583 [23.11] 4.38 |
| Large (10 hectare and above) | 2766 [3.9] | 2166 [2.4] | 1654 [1.6] | 1230 [1.03] | 1095 [0.85] | 50064 [30.9] 18.1 | 37705 [23.0] 17.41 | 28659 [17.3] 17.33 | 21071 [13.22] 17.12 | 18715 [11.82] 12.99 |
| Over All | 70493 [100] | 88883 [100] | 106637 [100] | 119931 [100] | 129222 [100] | 162124 [100] 2.3 | 163797 [100] 1.84 | 165507 [100] 1.57 | 159435 [100] 1.33 | 158322 [100] 1.23 |

Note: Total May not tally due to rounding off. Figures in brackets are %ages to all classes
Source: Ministry of Agriculture and Cooperation <http://www.indiastat.com/agriculture/2/agriculturalandholdings/153/stats.aspx>

This is clearly reflected in the shrink of average size of holdings from 1.69 ha in 1985-86 to 1.1 ha in 2010-11 (ICAR, 2011). As per the predicted estimates of ICAR, (2011) estimated drop in farm holding will be 0.24 ha and more than 95 % of the holdings will be under the category of small and marginal holders in 2050.

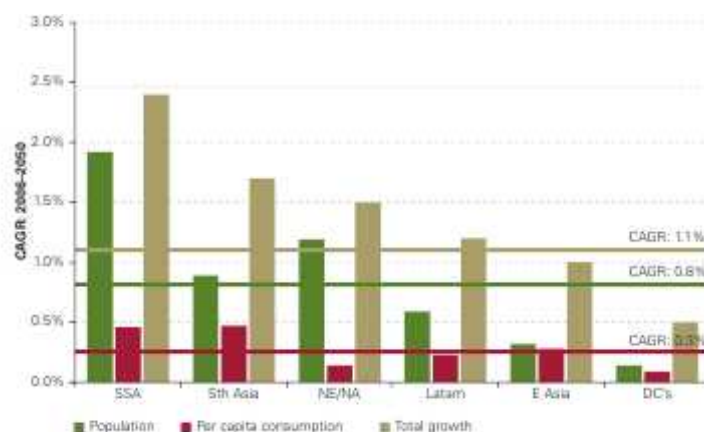


Fig. 1 Food demand by 2050

Source: N Alexandratos and J Bruinsma, 2012, *World Agriculture towards 2030/50: the 2012 revision*, ESA Working Paper No. 12-03, Rome, FAO

The heterogeneity in small holders is also apparent in terms of farming attitude, existing land tenure regimes, and distribution of farms land into various activities for non-agricultural income and employment of the family members. The reasons behind these noticeable problems are the globalization and liberalization due to which small holders are incapable of meeting the demands of higher value market or consumer-driven markets (Fig 2). Small

holders remain far behind in the run of the higher value market majorly because of lack of knowledge and adaption to new production standards, grades, and quality and food safety regulations.

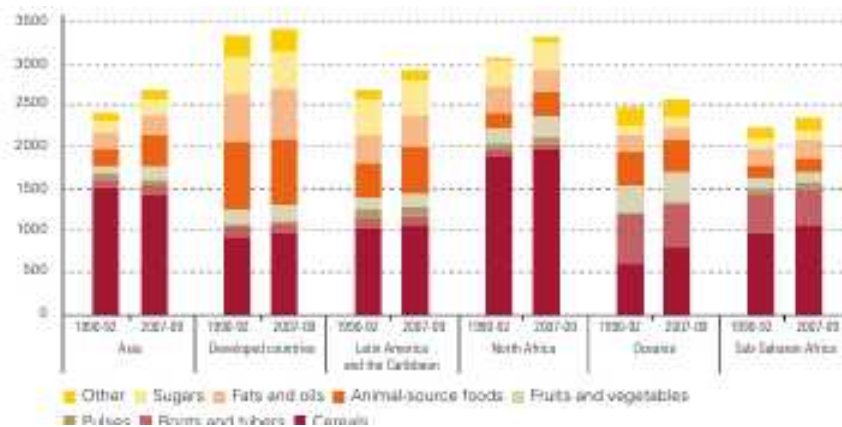


Fig 2. Changes in consumer preference

Source: FAO, WFP and IFAD, 2012. *The State of Food Insecurity in the World 2012*

On the other hand, poor infrastructure in the rural sector starting from the roads, rural energy provision, communication infrastructure (which in turns hinders access to market information), rural finance and insurance services, health and education services, plays a major role in developing negative relation between small holders and markets.

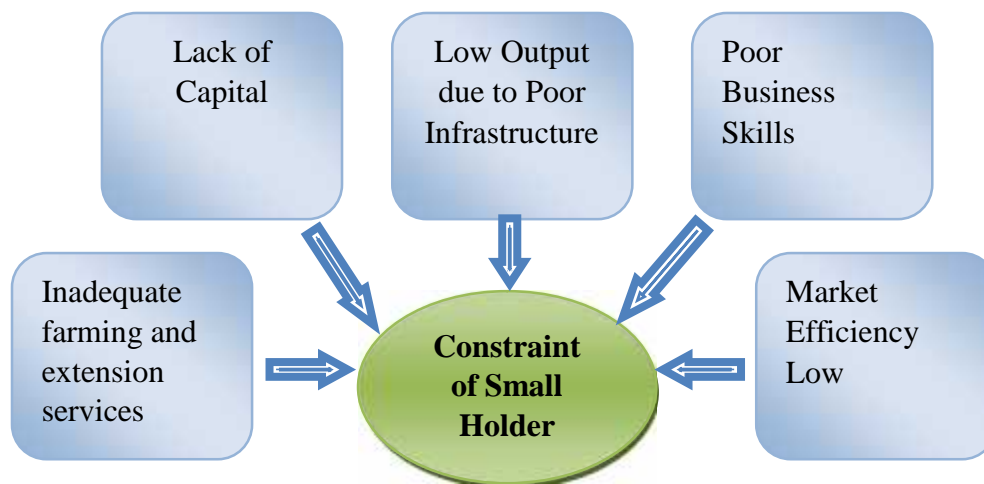


Fig 3. Problems associated with small holding farming

All these factors (Fig 3) make the system dynamic, making smallholder farming a landscape in continuous evolution. Therefore, for the rural livelihood enhancement it is of prime importance that small farms get commercially oriented into a small business to bring about

the abundant range of employment. Such execution will not only help in up gradation of the primary (if not the sole) household income, but will build up the source of subsistence and food security for partially cultivated as a secondary source of income for most of the poor rural people. Formation of small business unit will encompass an ample spectrum of potential market targets in a form of the local staple outlets, or traditional cash crops markets, or non-traditional high value crops for domestic or export market channels.

3. Producers' Collectives

Cooperatives and producers' organizations open a new avenue for the smallholder producers by bridging the gap between productivity and market accessibility through a guaranteed market for produce and access to machinery and modern technologies equipments (Fig 4). They facilitate various multiple linkages with institution/organization to spread awareness and strengthen the policies and procedures to boost productivity and help farmers to adapt changing organizational conditions. Offering of crop agricultural extension services by cooperatives have positive impact on performance. Beyond that they often offer social services and building of physical infrastructure in rural areas.



Fig 4. Potential impacts of producer organizations

Collectives often out-compete the middlemen on one important dimension, offering more consistent, reliable, and generally higher price to their farmer suppliers than local middlemen through signing forward purchase contracts several months in advance of the harvest to supply products to buyers. But the major advantage of middleman over the collectives is that they are able to offer cash at the time of harvest whereas on the other hand, most of collectives lack sufficient working capital and they pay their suppliers until they ship the product and are paid months later by their buyers.

Solution to this problem is adopting value-chain financing, where cooperatives can pay their farmer members or suppliers competitive prices at the time of the harvest strengthening the long-term viability and fulfilling their contracts with international buyers. The value chain is an innovative and proven approach for agriculture system which goes beyond the yield productivity and addressing the issues of harvest, post-harvest, marketing and commercialization. Value chain supports the system by tailoring and improving efficiency along the harvesting, storage, processing, packaging and shipping phases as well as in the final uses of food.

The trendy notion of “sustainable intensification” encompasses all farming technologies and approaches that specifically strive to improve the productivity of land while minimizing the environmental impact (Godfray et al., 2010). However, the value chain perspective goes beyond the single yield productivity at farm gates and expands the analysis to include harvest, post-harvest, marketing and commercialization activities, where the management of the environmental dimension encompasses improving efficiency along the harvesting, storage, processing, packaging and shipping phases as well as in the final uses of food. The food waste flow is indeed a significant phenomenon Figure 5.

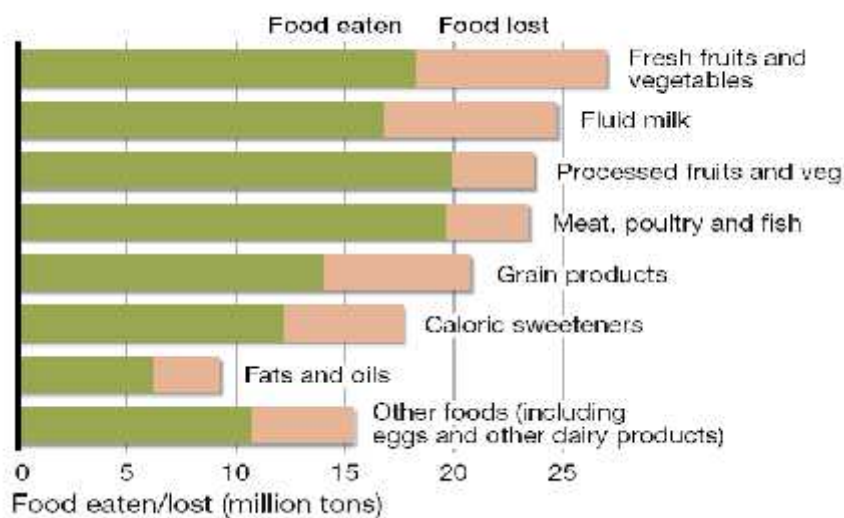


Fig 5. Food eaten/lost

(Source: United Nations Environment Programme {UNEP}, 2009)

The food waste exacerbates the short fall in production vis-a-vis increase in consumption as depicted in the Figure 6.

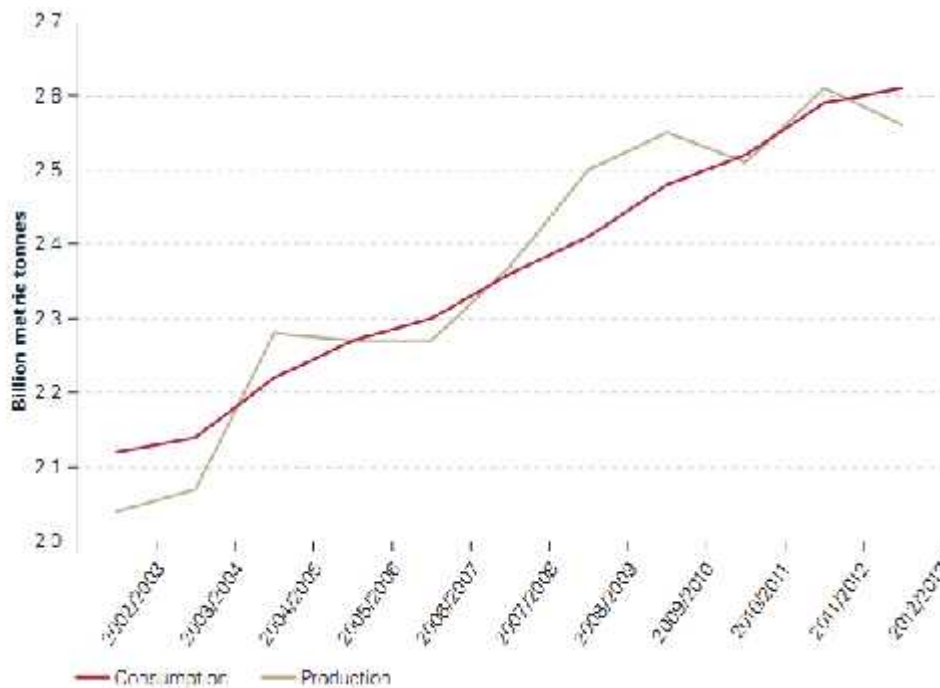


Fig 6. A substantial gap between production and demand

(Source: Source: USDA PSD database, February 2013: Maize, wheat, rice, soybeans, rapeseed, sunflowers, barley, rye, sorghum, oats)

4. Frameworks for Understanding Agri value Chains

Daniele Guidi outlines a comprehensive framework in Sustainable Agriculture Enterprise: Framing Strategies to Support Smallholder Inclusive Value Chains for Rural Poverty Alleviation (CID Research Fellow and Graduate Student Working Paper No. 53 October 2011). Starting from the underlying multi-functionality of agriculture principle mentioned earlier, the conceptual framework for Agri Value Chain analysis can benefit from insights of welfare and institutional economics, business management and organization theory (Fig 6 & Fig 7).

Theoretical insights for Agri Value Chain

- Poverty reduction dimension is to be informed by Sen's theory of poverty as capabilities deprivation, and the resulting attention given to qualitative aspects of poverty and the multiple dimensions of capital asset endowment in rural livelihoods frameworks.

- Regarding the economic dimension, the theory of transaction cost economics is valuable to analyze farmer participation behaviour. As small farmers participate in value chains, increasingly conceiving their activity as a business venture, a risk management perspective needs to be adopted. The notion of transaction costs is thus useful in explaining their decision making options and constraints, in addition to the business decisions of the downstream intermediaries, buyers and retailers.
- The theory of business management offers valuable insights through two concepts: a) the notion of entrepreneurship of farmers, which has been empirically tested as a relevant factor contributing to rural development and poverty alleviation; b) the notion of competitive advantage both within and outside the value chain, which offers insights into the dynamics of power, value creation, value addition, and information asymmetries in value chain relations.

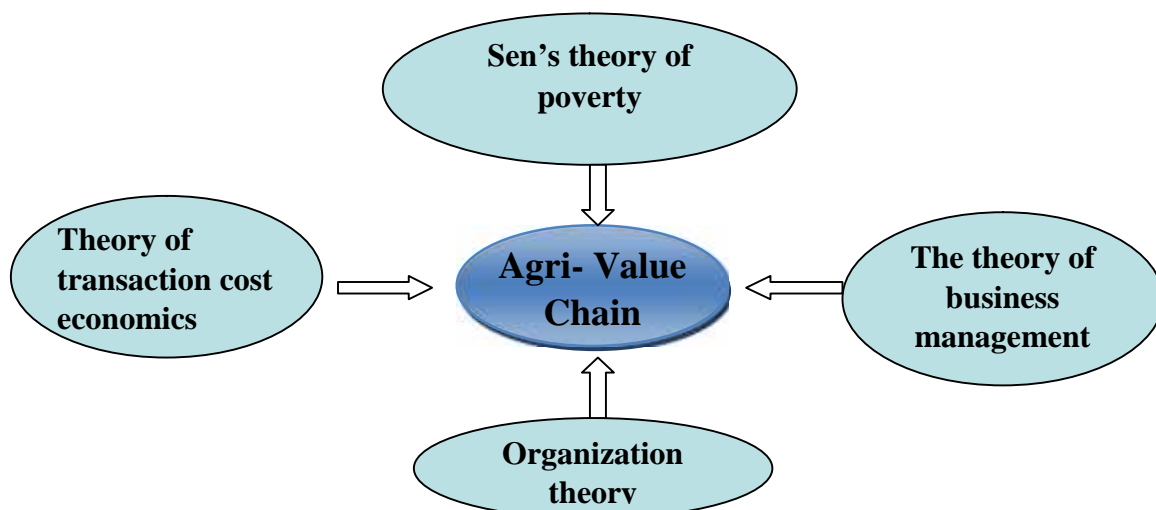
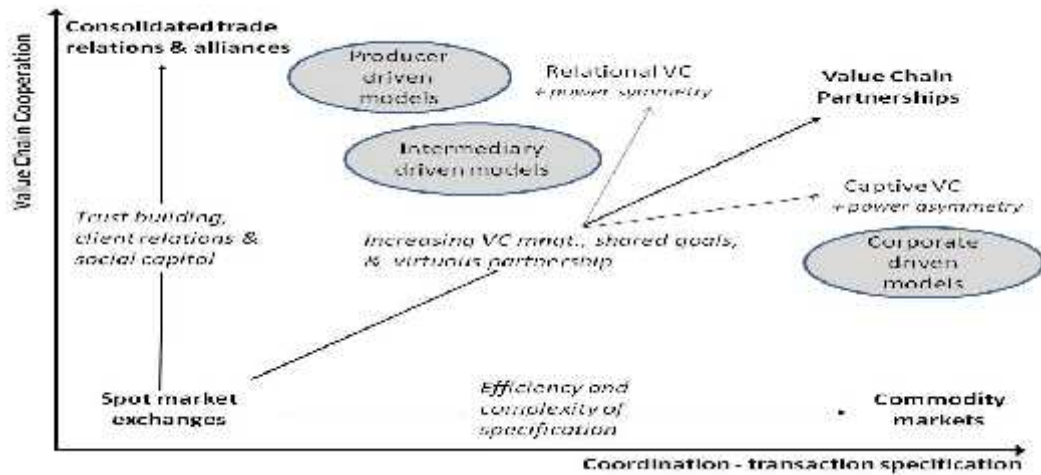


Fig 6. Theoretical insights for Agri - Value chain

- From organization theory, the conceptual framework borrows the notion of organizational fit (Korten, 1980), for which a good systemic performance is dependent on synergies derived from a good blending of roles, tasks and organizational variables among the collaborating actors. In a rural development context, the corollary of such a notion is that “fit” has to be reached through a learning process, which thus moves away from blueprint planning approaches and adopts a more dynamic, adaptive and error-embracing approach. It is useful to visualize agri value chains in terms principal drivers as depicted in Figure 2.



(Source: Adopted from poole et al, 2010)

Figure 7: Classification of Sustainable Agriculture Value Chain Approaches

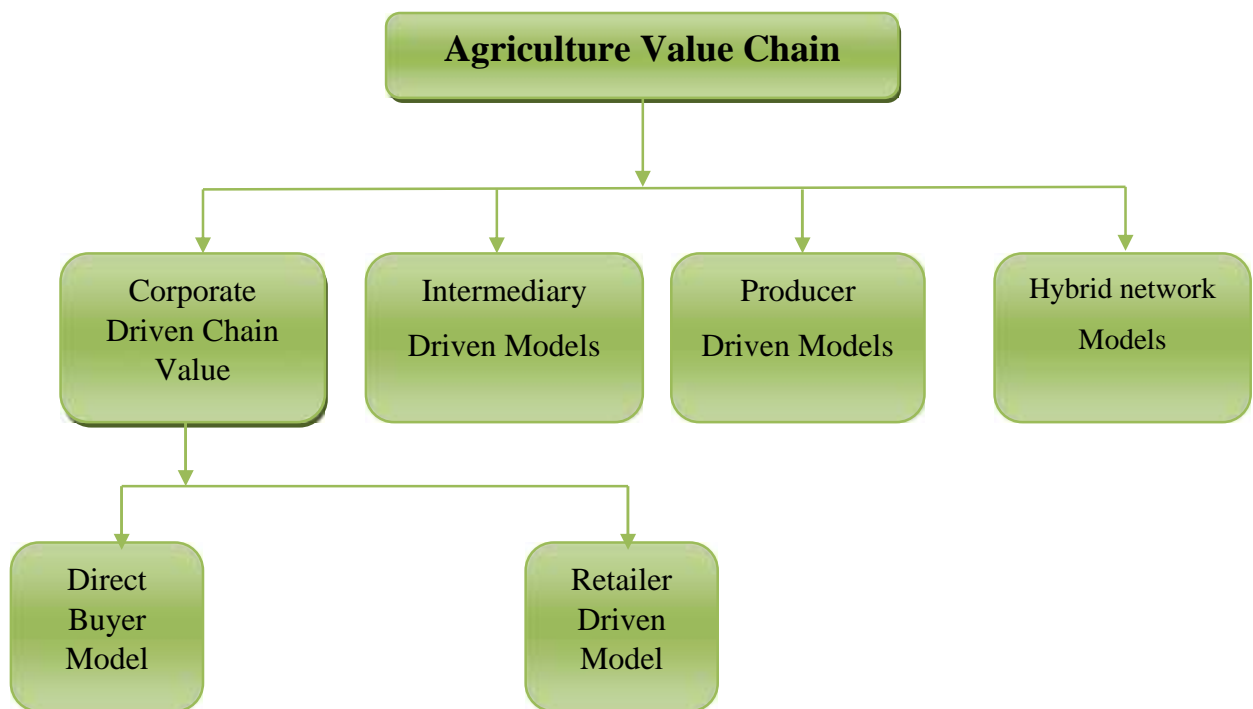


Figure 8: Different Agricultural Value Models

A. Corporate Driven Value Chains

These exhibit a predominant role of the downstream corporate buyers in shaping the organization of the smallholders' market linkage, or in excluding the participation of smallholders in favour of large farms and plantations. Typically the main driver is the paramount need of the buyer to assure a certain volume and quality of supply for either

processing or the final consumer markets. In this context, the norms and standards related to quality, volume, consistency and timing of supply become the most important objectives pursued. The adoption of sustainable agriculture practices can be present or absent depending on the farming and crop context, as the environmental profile of the value chain is typically not one of the main drivers, unless the business model explicitly incorporates social corporate responsibility goals and/or intends to supply organic certified retail markets. Two variants worth distinguishing are as follows.

a) Direct Buyer Models. The chain's anchor actor is typically a large agro-industry, such as a processing corporation or a large specialized supplier of an agricultural commodity. The common institutional arrangements include a network of owned and operated storage facilities, or some kind of advanced logistic systems, local processing or packaging plants, and formalized contract farming agreements.

b) Retailer driven Models. The global retail industry have been redefining the quality, safety and logistical standards that are pre-requisites to establish and consolidate market linkages with suppliers and ultimately with producers. In such a context, the perish-ability of the produce, the phyto-sanitary standards, the demand for homogeneity and aesthetic features, together with timely production schedules and tightly planned delivery schedules become crucial requirements and thus potential entry barriers for small farmers unable to collectively adapt to such new and demanding conditions. In these value chains, small farmers' possibilities are dependent on the capacity of their collective organizations to metabolize the technical and management skills needed to meet such standards. Weak farmer organization management and lack of pro-poor intermediation can favour less equitable terms of trade.

B. Intermediary Driven Models

These are led by heterogeneous public or private sector actors, and accordingly the institutional arrangements can vary. Public agencies and NGOs stimulate value chain approaches for development goals. Private sector intermediaries (i.e., input suppliers, traders, wholesalers) are motivated to supply commercial services. Where it does not exist yet, the public agency or the NGO contributes to the organization of a collective farmers' institution. The common denominator, in all intermediary driven models deemed to be sustained, is that the institution facilitating the downstream and upstream linkages performs its function in a way that reduces transaction costs for all value chain participants.

C. Producer Driven Models

In general, these are such that smallholders are linked to markets through a bottom-up empowerment process which aims at establishing and/or consolidating their collective organization. This can be done more or less formally. A leader farmer, for instance, could take the entrepreneurial responsibility to organize and collect the produce of neighbouring small farmers. In other cases, formal institutions are created to manage the smallholders' community as a single market operator, such as through the formation of an association of producers or the establishment of an agricultural cooperative. These organizations result in the sharing of fixed costs, economies of scale in the purchase of inputs, and in marketing (Torero, 2011). Exogenous agents (public extension programs or NGOs) can act as facilitators, but eventually have to trigger an endogenous willingness to bring about a sustainable business venture.

D. Hybrid network Models

A new way to conceive business development is emerging that essentially focuses on the convergence between a) the natural profit motive of the private sector enterprise and b) the goals and needs of the wider societal and environmental context in which the business will grow and mature. The underpinning idea is that embracing a vision of "shared value" creation by the private sector firm (Kramer, Porter, 2011), in a rural developing world context, can align poverty alleviation and rural welfare enhancement with solid business growth. These new business models, opening to a modality of multi-stakeholder network formation, find an added value formula in forging partnerships between private firms, government agencies, and civil society (Wilson et al., 2009). This collaborative network behavioural choice can stimulate innovation as well as mutually reinforcing feedbacks, therefore supporting sustainable returns on natural, economic and social capital.

More balanced combinations of shared objectives in terms of coordination and cooperation in the governance of the value chain allow the participants to create a platform for a) genuine negotiation of the different priorities at stake, b) genuine effort to address the trade-offs and c) proper business acumen to leverage the synergy potentials. Some cases describe value chains clearly initiated by a social entrepreneur, but often times there seems to be either an immediate or progressive dynamic of alliance building, with shared responsibilities and roles, where the "mixed network" of agents can be seen as a whole. It is often the case that some sort of co-ownership arrangement allows small farmers to truly "upgrade" in value chain management and control: one such mechanism is that farmers' cooperatives or producers'

collectives, become shareholders of local or international marketing or processing corporations.

5. Producers' Collectives to meet Future Challenges

With the neo-liberal policies of the last 2 decades, small as well as medium-size farmers were given little or no attention by governments, and by most of the multilateral agencies. During the last 15 years very little attention has been given to agricultural development and to the development of producers' collectives, farmers' cooperatives and other producers' interest organizations. Consequently, during the last 15 years, very few development agencies, NGOs, bilateral or multilateral organizations have supported agricultural development. And even fewer agencies have been defending, promoting or supporting agricultural cooperatives. At the same time, very few governments continued to see rural cooperatives as important tools for development and allies in the fight against poverty. This situation has led to a dramatic negative trend in Agriculture. This trend needs to be reversed for meeting future challenges.

The food world is facing a daunting challenge to meet the needs of 9 billion people by 2050. Agriculture is not only expected to produce more food, but also more raw materials for biofuels, bio-chemicals and fibres. Nearly doubling current agricultural production with fewer resources (land, water and phosphate resources) in a manner that is both socially acceptable and environmentally sustainable seems to be an enormous task. This is illustrated by the fact that in the year 2012 still about a billion people suffer from hunger and malnutrition.

Producers' collectives seem to provide answers. ***Rio+20 document affirms that co-operatives are key for sustainable development***

- *We acknowledge the role of cooperatives and microenterprises in contributing to social inclusion and poverty reduction in particular in developing countries.*
- *We resolve by [2020 / 2030] to sustainably increase agricultural production and productivity, including through improving the function of markets and international support mechanisms, particularly for the developing countries, with a view to increasing public and private investment in agriculture and rural development. Key areas for investment and support include: sustainable agricultural practices; rural infrastructure, storage capacities and related*

technologies to significantly reduce post-harvest and other food losses and waste throughout the food cycle; research and development on sustainable agricultural technologies; developing strong agricultural cooperatives and value chains; and strengthening urban-rural linkages.

- *We are encouraged by government initiatives to create jobs, for poor people in restoring and managing natural resources and ecosystems, and we encourage the private sector to contribute to decent work and green job creation for both women and men, and particularly for the youth, including through partnerships with small and medium enterprises as well as cooperatives. (Friday, 22 June 2012 [Rio declaration acknowledges co-operatives](#): Posted on 23 June 2012 by Ajay Jha)*

6. Conclusions

a. Smallholder Integration in Agri Value Chain is Necessary

Smallholder inclusion presents a number of challenges such as how small-scale farmers can be linked to markets and be integrated into the farm-to-consumer value chains in a way that makes it possible to benefit more from the economies of scale and to capture more value for their products. Moreover, the process of productivity growth through farm (and off-farm) investments and adoption of modern farming techniques have to be facilitated.

b. Small holder Agriculture Viability is Crucial

Food and Agribusiness (F&A) companies in the value chains will have to source more from smallholders in the decades to come. This implies a transition process in which small-scale producers are stimulated to become economically self-sustaining and small-scale farming is turned into a scalable and competitive business, producing food for local and international food markets in an environmentally sustainable way. A value chain approach to smallholder inclusion is crucial for breaking the barrier of low-farm-income trap.

c. Collaboration across Actors in Agri Value Chain is critical

Small farms often lack access to affordable financial services, knowledge and education, market information, land, water and fertilizers. They must therefore unite in strong producer organisations or - even better - in cooperatives. By working together, they are able to overcome the drawbacks of their small size and fragmented production structure. There are various ways to increase food production, such as improving yield per hectare, cropping

intensification, increasing arable land, reducing post-harvest losses, storage and transport losses, improving irrigation technology and reversing land degradation. However, achieving these gains in practice will require an exceptional level of collaboration among stakeholders in the agricultural value chain, including governments, companies, multilateral institutions and civil society organisations.

d. Rural Advisory Services – Trigger Change

However, it is not just physical resources that co-operatives can pool. The most powerful resource that farmers are able to share – once organised into co-operatives – is knowledge. Rural public and private advisory services work directly with co-operatives and farmer organisations around the world, to provide them with the information and services they need to produce more food for their families, and build booming local businesses. This support can range from linking farmers to the latest innovations in scientific research, to improving the efficiency of water use, to providing training on how to successfully market their produce.

But this crucial stream of information does not flow in just one direction. Farmers themselves also have important knowledge and innovations that are specific to their particular circumstances. Systems like this need to be scaled-up, to offer smallholder farmers the chance to work themselves out of hunger and poverty. We need a standardised way to share information that takes into account the diversity of rural life, and offers best-fit approaches for plural situations, rather than scaling-up a "one-size-fits-all" approach

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