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Farm Structure: Towards an Integrated Classification Framework and Typology

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ABSTRACT

Numerous experiences show the value of developing classifications of farms based on structural characteristics to better design and evaluate policy. Specifically, farm typologies provide policy makers a better understanding of the evolving diversity of agricultural holdings to more efficiently target policies. Such tools are widely used in the European Union and the United States but are less common in developing countries. In addition, cross-country comparisons are key to informing dialogue at regional and international levels but require enhanced harmonization of existing information. Session IDCB 5 in the ICAS VI provided an introductory look at how various countries quantify structural change in agriculture. The Global Strategy to Improve Agricultural and Rural Statistics (GSARS) has started to systematically identify the core data that should be available. Beyond this, there is no common theoretical and empirical framework to monitor and analyze the diversity of agricultural holdings and their transformations. Yet, such a framework could provide national policy makers a comparative or relative vision of various local and national contexts, while serving as an evidence-based resource to inform policy dialogue at an international scale. To respond to such issues, the GSARS, together with the World Agricultures Watch (WAW) and international experts, is developing an international framework for characterizing agricultural structure to support countries as they develop comparable typologies to inform policy dialogues and improve monitoring at national and international levels. This paper summarizes the progress to date in working towards an international harmonized typology framework.

Keywords: Farm classifications, Typology, Agricultural Structural Change, Policy

PAPER

1. Motivation and Efforts to Create a Policy-Relevant Farm Typology

Rapid changes are occurring in agricultural supply chains worldwide and are directly connected to transformations in agricultural structures. Changes are impacting the structure of agriculture at all levels of capacity, but oftentimes, structural changes impact the most vulnerable who control fewer assets and have difficulties in managing risks. Rapid structural changes and attention to contemporary issues—such as sustainability, food safety and nutrition, and equity—amplifies the need for policy makers to carefully consider the diversity of holdings and transformations they may experience in the context in which they operate.

Numerous experiences show the added value of developing farm typologies to analyze, summarize and better understand the evolving diversity of agricultural holdings to better design and evaluate policy.[1] Such tools are widely used in the European Union and the United States but are less common in developing countries. In addition, cross-country comparisons are key to informing dialogue at regional and international levels but require enhanced harmonization of existing information. Session IDCB 5 in the ICAS VI provided an introductory look at how various countries quantify structural change in agriculture. The Global Strategy to Improve Agricultural and Rural Statistics (GSARS) has started to identify systematically the core data that should be available (FAO, 2010). Beyond this, there is no common theoretical and empirical framework to monitor and analyze the diversity of agricultural holdings and their transformations. Yet, such a framework that provides national policy makers a comparative or relative vision of various local and national contexts, while serving as evidence-based resources to inform policy dialogue at an international scale is largely missing.

[1] In addition, typologies have been developed for a variety of purposes outside of agriculture. (See Saravia-Matus, et al., 2015, for an extensive review of typology development and methods.)

In order to fill such a gap, the GSARS, together with the World Agricultures Watch and international experts, is developing an international framework for characterizing agricultural structure based on key domains of structure to inform policy dialogues and improved monitoring at national and international levels. The guidelines will also provide reference points for countries, to facilitate progressive harmonization of concepts, classification and reporting systems.

As a first step, an extensive literature review was completed and highlighted a series of domains common to most existing international, national and regional typologies (Saravia-Matus, et al., 2015). In October 2015, an international expert group was formed with recognized experts bringing various technical and geographical expertise to consider key dimensions to be taken into account in the typology guidelines. In January 2016, a first concept paper (Ahearn, et al., 2016) was reviewed by the international Scientific Advisory Committee of the GSARS. Following the meeting, a parallel process has been undertaken to combine the production of an international typology informed by the recent release of the Sustainable Development Goals (SDG), and a country-driven process to develop nationally relevant typologies from a set of relevant policy domains.

In this paper, we outline the progress to date in the development of a harmonized classification system. First we review the major policy issues facing decision makers that are relevant to a classification system. Next we consider the classes of characteristics—or as referred to here, domains—that can best capture the most important policy considerations. Upon these domains, a harmonized system will be developed, including consideration of the critical underlying questions that must be addressed in light of the ongoing and future transformations of farm structure. We then consider the potential for an integrated international and national typology drawing on these domains and showing the challenges and options for such a framework. We also consider a country-driven process, based on a flexible framework targeted to support nationally relevant typologies. Finally, we conclude with the next steps in the development of a harmonized farm classification system.

2. Need for a Typology and Domains of Structure

2.1 Common Critical Policy Issues

The policy challenges are recognized to be multi-faceted, including challenges exogenous to agriculture. In addition, there is a diversity of farms with different challenges, contexts, and contributions, which contribute to their different responses to policies and market signals. Policy objectives and priorities may vary over time and place as a result of this diversity. Due to the multiple and inter-related objectives of policies, there is a corresponding need for a farm typology framework that goes beyond a single dimension—such as farm size measured in hectares of land—for informing those policy maker decisions. The recognition of the integrated nature of multiple objectives has increased the interest—and frankly the need—for policy makers to have the benefit of statistical frameworks that simultaneously consider a variety of measures of farm structure in the development of a typology. In a globalized economy, it is useful to both international and national decision makers to have a common framework in which to consider the diversity of farms. The most recent example of the value of an international perspective is evident in the wide interest in the Sustainability Development Goals (SDG).

2.2 Policy Relevant Domains

The preferred approach to typology development at the international level, and perhaps national, is through a deductive process, rather than a multivariate statistical approach.[2] The deductive approach consists in defining types on the basis of pre-selected domains of characteristics and specified levels, identified by expert knowledge, literature reviews, and/or a specific policy objective/focus. Ahearn, et al. (2016) identified an expansive list of domain characteristics of agricultural holdings and households that could be considered as core concepts in the conceptual framework include the following:

- Legal Status/Management (household or corporate/cooperative/other),
- Dependence of the holding on family labor
- Off-farm Work/Pluriactivity of household member(s)
- Extent of marketing (compared to self-consumption)
- Commodity specialization (could be defined in various ways, e.g., food or cash crop, or based on specific commodity),
- Farm Size (measured in either area or value of production),
- Gender
- Access, and the form of access, to assets or capital
- Origin of the capital and its intergenerational transfer

[2] It may be preferred by some stakeholders that a typology be developed using multivariate statistical analysis, rather than a deductive process. Saravia-Matus, et al. (2015) review alternative approaches.

According to FAO (1999) devising an appropriate typology begins with a declared operational interest: trying to simplify the heterogeneity of the farms through the identification of groups or types defined under a core set of traits and presenting similar potential and experiencing similar problems. Such key traits have been identified above as core concepts but require further organization into domains of interest. For this purpose, we identify thematic domains that may guide farm typology building: Legal Status, Economic Size, Product Mix and Input Use, and Human Capital and Household Characteristics. These domains connect to a series of distinguishing criteria and their policy relevance (Table 1).

Table 1 - Typology Thematic Domains

Thematic Domain	Main Distinguishing Criteria	Policy Relevance
Legal Status/Management Starting point for the international typology. National typologies may also use this domain as starting point, depending on typology objectives.	Legal status is designated and varies across countries	Only a small share of farms are designated as corporate farms even in developed countries, however, they account for a disproportionately large share of output and they have been a growing share over time. Furthermore, this designation is used in the System of National Accounts, and so an indicator is likely to be available at least at a macro level.
Farm Economic Size Recommended as the starting point for national typologies, but may vary according to national policy interests.	Economic value of agricultural output (e.g., including self-consumption and sales)	By considering an economic size indicator which captures total agricultural income generating capacity (including self-consumption and sales), it is possible to compare farms involved in widely diverse agricultural activities. While it is useful to know the extent of self-consumption relative to sales, rather than refining the typology classes, this information may be provided as part of the reporting of statistics by typology group. Farm size distribution measures are generally available for most countries; hence this availability will facilitate monitoring trends.
Production Mix and Input Use Since commodity mix varies significantly by country, aggregations will vary significantly in national typologies, and will be major categories in international types.	Commodity mix, specialization, input use and production practices, and access to land and capital	Production level information is a basic indicator for policy since many farm policies and marketing options are commodity-specific. It also incorporates information on physical capital, technology and agronomic practices. Thus this domain allows for the evaluation of production efficiency and access to factors of production (other than labor, treated in last domain). Input use and production practices are relevant to agri-environmental indicators.
Human Capital and Holder(s) Household Characteristics For national typologies focus on gender and the family farming sector may be of specific relevance.	Farm Labor Usage (Working time on Holding for family & employees) Working time and income from family working off-farm. Total family income from farm and off-farm sources. Market Orientation Gender	This domain is important for policies focused on both farm production and farm family well-being. It brings more visibility to emerging international policy agendas, such as the SDG, and national agendas that focus on specific categories such as: small scale family farms, female-headed households, young farmers and selected ethnic groups. Data to measure specific labor information are at times missing (particularly off-farm working time and income), but due to their policy importance they are now included in core data goals and their availability is expected to increase.

3. Organization of Domains into International and National Typologies

It is important that a typology have a balance between a framework that offers a harmonized classification system and that offers value in differing contexts and under a variety of policy goals. The organization of the domains into typologies for international and national purposes is expected to differ. The international typology will be guided by common agricultural, economic, social, and environmental issues, such as those captured in the SDGs. The national typologies will be guided by unique national priorities, especially those focused on improving the well-being of the population and the farm and household structure.[3] Consequently, the organization of the policy domains will differ, but the goal is to provide a typology organization that can link the many national typologies to the international typology, or perhaps a family of international typologies. A useful transition between national and international typologies would be the regional typology, like for example the typology built in the European Union, allowing for regional comparisons and common analyses.

3.1 International Typology Development

Different challenges in developing a useful typology for agriculture are amplified when the scope of analysis extends to the international context. Although there is significant diversity in agricultural structure across and within countries, basic agronomic relationships and an increasingly globalized marketplace bring some commonality to the challenge. Similarly, there are some socioeconomic characteristics that are common to countries regardless of stage of development. In particular, first, it is worth noting that agriculture in all countries is dominated by family control and management and, secondly, nonfarm employment is important in sustaining family farms across the globe. Finally, the wide acceptance of the SDGs brings agreement to the multiple policy goals that will drive an international typology.

One logical difference between an international typology and a national typology may very well be the starting point, or highest level of classification. In particular, an international typology may logically begin with a distinction based on legal status, that is, non-corporate family holdings and corporate holdings, whereas a national typology may not. This is because, first, large multinational firms increasingly entering the supply chain tend to have a corporate organization. Such a distinction may be less critical for a national typology because of the absence of much market presence by multinational firms. But, understanding the variation and growth of corporate activity spatially across the globe may be of significant interest in an international typology. It is these large holdings that further complicates classification and data collection because they often have a complex organizational structure, for example, to manage risks and reduce taxes. Furthermore, many distinguishing characteristics related to the family of the holding may be irrelevant in a corporate holding. For example, the off-farm income of corporate holdings or the gender of the corporate board would be irrelevant. Hence, in an international typology, it is necessary to recognize that different domains will be employed below the legal status distinction.

Finally, in the interest of consistency with statistical guidelines, the legal status is a useful entry point in an international typology because it is compatible with the U.N. System of National Accounts and is, therefore, commonly available.

3.2 National Typology Development

Since national typologies will be guided by national goals, inclusive multi-stakeholder interaction about the design of a country-specific typology is critical.. However, a likely key entry point in national typologies is an economic size criterion or a total family income criterion. Depending on the overriding policy focus of a nation, the entry level of a national typology could focus on either (1) the farm economic size indicator (based on total agricultural income including sales and self-consumption or similar) or (2) the total family income indicator provided agriculture is considered the main income source. Under either scenario, units will be classified as below or above the selected threshold. Regardless, additional distinguishing criteria are to be integrated in order to identify relevant national types. It is instructive to examine an empirical case for a national typology. In the case of El Salvador (Guanziroli, 2016) In this particular instance, there was a policy interest to distinguish family from non-family farming sectors as a first step, so the universe of farms was first disaggregated in such terms using both legal status and family labor information. In addition, country-relevant thresholds were chosen for selected key indicators of distinguishing criteria within the class of family farms, such as:

- total agricultural income, with four levels – high, medium, low and very low;
- market integration, with 3 levels – Commercial (more than 2/3 of the production is commercialized); transitional (less than 2/3 but more than 1/3 of the production is commercialized) and subsistence.

[3] The development of typologies for farm households in developing countries should recognize that different "types" may be relevant for different development trajectories (e.g., see Fan, et al. 2013).

- Specialization, with three levels according to the presence of a main product in total output – specialized (+70%), semi-diversified (30-70%), diversified (less than 30%);

- And technological , with three levels based on the relative usage and proportion of variable inputs: intensive (over 50%), semi-intensive (30 to 50%) and low intensive (less than 30%). This is the first step to engage in crossings of distinguishing criteria that can lead to highly policy specific farm types.

That is, it is possible to identify specialized family farms with high income and technological level on one hand, and the poorest and less marketed integrated family farms with diversified portfolios and reduced used of inputs on the other hand. The advantage is that all farm types in the middle of such a continuum may also be well targeted.

4. Conclusions

International and national typologies are expected to provide new insights into agricultural transformations. For example, it will be possible to assess phenomena related to challenges within the agricultural sector, including agricultural feminization, so-called land grabbing, rural economic diversification, etc. Farm typology development rests on established general statistical frameworks and specialized frameworks focused on agriculture and rural areas.

However, the proposed development faces a variety of challenges, including data availability, complex organizational forms, and capacity building. Furthermore, addition of an agri-environmental dimension faces significant hurdles since natural resources and policy priorities are often specific to local areas, but a typology will benefit from the significant efforts that are being invested for other purposes. More in-depth analysis is needed on the variation in the definition of a farm, land tenure systems, and off-farm work income. It is essential that typology development engage with multiple stakeholders, including those closely associated with policy development, in order to ensure that typologies live up to their potential to become a valuable tool in policy making.

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