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Underestimation of economic contribution and vulnerability of (agro)pastoral systems
Pastoralist involvements to data collection and analysis matter

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A lack of data and low quality and unreliable data inhibit the development of effective livestock and pastoral policies. Comprehensively measuring and modeling animal production systems and their contributions to national or regional wealth creation remains a challenging task. Overall, although important improvements have been made in the measurement of livestock’s contribution to GDP, knowledge gaps remain.

Supporting (agro)pastoral organizations in Argentina, Chad, and Mongolia in collecting and analyzing primary data, provide new insights into the economics of pastoralism, the contribution of pastoralism to sectoral and national GDPs, and the understanding of their perception and responses to multifaceted shocks. The study is based on conceptual frameworks for the determination of income and production costs, the analysis of economic contributions, and the analysis of shocks and strategies. These different frameworks were designed to be appropriate to the intrinsic characteristics of pastoralism in Argentina, Chad, and Mongolia. Two sampling targets were set based on the capacity of the pastoral organizations to carry out the surveys within the existing time and cost constraints. The main technical constraint was to remain within a margin of error of less than 5% in accordance with standard statistical approaches. We analyzed data collected on 1,197 pastoral households in Argentina, 803 in Chad, and 765 in Mongolia.

The average annual gross revenue in pastoral and agropastoral areas is estimated in equivalent USD to 20,574 in Argentina; 5,454 in Chad; and 4,773 in Mongolia. The average gross revenue is provided by livestock product sales (37% in Argentina, 54% in Chad, and 74% in Mongolia), other monetary revenue including off-farm revenue (28% in Argentina, 16% in Chad, and 16% in Mongolia) and household self-consumption (35% in Argentina, 30% in Chad and 10% in Mongolia). There are strong regional disparities in the sources of revenue in the three

countries. The diversified sources of revenue and the importance of self-consumption in household economies also indicate that pastoral systems fulfill a range of functions, serving as a source of income, food security, and flexible labor. As poverty analyses mainly take an absolute poverty approach, which considers the essential nutritional needs of individuals, incorporating self-consumption becomes relevant to improve current figures about poverty in pastoral regions, particularly in Chad. This also reflects the difficulties in carrying out analyses of household poverty in pastoral systems. Annual average production costs amount to USD 1,875 in Argentina; USD 1,467 in Chad and USD 283 in Mongolia. In Argentina, production costs are dominated by feed purchases (65%) and service charges (18%), whereas in Chad, animal health expenditures and herd restocking constitute the main cost items (27% and 26% respectively). In Mongolia, costs come from the purchase of services (44%) and herd restocking (37%).

Pastoral households are effectively participating in the creation of national wealth. Even when only their monetary/market outputs are considered, pastoralists contribute 0.6% of the gross domestic product (GDP) in Argentina, 11% of the GDP in Chad, and 9.6% of the GDP in Mongolia. By incorporating self-consumption as an important component of gross revenue, the contribution of the same households jumps to 1.4% of the GDP in Argentina, 27% of the GDP in Chad, and 11.9% of the GDP in Mongolia. Given the importance of self-consumption, particularly in Argentina and Chad, the contribution of pastoralists to national economies appears to be underestimated.

Another major challenge in pastoral systems in all three countries is the high level of economic inequality measured through the tabulation of the Gini index. In Argentina, despite the implementation of successful policies to reduce economic inequality (improvement of working conditions, both rate of employment and the quality of jobs; incorporation of people without formal labor income into the social security system), the Gini index measured in the pastoralist community remains very high. On the basis of gross revenue, the distribution of revenue in Argentinian pastoral areas is very unequal (Gini index: 56.6%). In Mongolia, the Gini index is 63.1%, reflecting the unequal distribution of gross revenue. In Chad, although the Gini index is relatively low (48.3%) compared to Argentina and Mongolia, it remains above the national average (44.0%). The main concern related to these high levels of inequality is that they can reflect asymmetric access to productive resources (basic infrastructures and services, natural resources, land use, etc.) and be a source of instability. It should be noted that self-consumption allows a reduction in the level of inequality.

Working with pastoral organizations, households in Chad and Argentina were presented with different shock scenarios and were asked to confirm or deny whether they had experienced one or more of these shocks over a predetermined period of time (the previous year for Chad and the last 15 years for Argentina). In Argentina, pastoralists report that most of the multifaceted shocks which they are facing affect the entire pastoral sector, and are thus covariate shocks (78%) rather than household-level or idiosyncratic shocks (22%). The reverse is true in Chad,

where idiosyncratic shocks are the most reported at 51%, with 43% being covariate shocks. The remaining 6% of shocks carried forward are attributable to a combination of various shocks. In this context of important shocks, households in both Argentina and Chad revealed that their most important strategies consist of strengthening their mobility by increasing the frequency and amplitude of livestock movements, and greater recourse to family labor to complement cattle herding and accompany this mobility. In parallel to these two most important strategies, households use complementary strategies, such as animal sales and the mobilization of social capital. However, it is worth noting that households never privilege recourse to official aid, thus showing that pastoral and agropastoral households seek to mobilize endogenous strategies based on their own system of actions rather than relying on third parties in the form of grants, subsidies, and credits.