

RECOMMENDATIONS

Dialogue and interaction with livestock policy makers and stakeholders in Africa have resulted in the following recommendations which, if promptly implemented, would be the first steps in improving livestock data systems in Africa.

To National Governments:

1. Ensure dialogue between the Bureau of Statistics with other data stakeholders to integrate livestock data into the National Statistical Plan, which would include design, financing and implementation of surveys with the aim of generating adequate information on the sector.
2. Provide for the adequate inclusion of livestock in the integrated survey framework as recommended by the *Global Strategy to Improve Agricultural and Rural Statistics*. This will guarantee that the different survey instruments jointly generate comprehensive and timely information on livestock, provided that adequate financial resources are allocated for the implementation of the various surveys.
3. Adopt agreed-upon international standards and classifications for the collection of livestock data and the generation of livestock statistics so as to ensure the generation of accurate statistics at country, regional and continental level. This harmonization should be discussed and agreed upon at the sub-regional level.
4. Include animal health- and disease-related data among the core data on agriculture identified by the *Global Strategy to Improve Agricultural and Rural Statistics*.
5. Update on a regular basis livestock technical conversion factors and reproductive parameters, the estimation of which is critical to generate accurate livestock statistics, including livestock population, production levels and livestock value added.
6. Improve the quality of administrative record livestock data, which are key for the Ministry responsible for animal resources to deliver public goods.

7. Include livestock in Living Standards Measurement Surveys, which is essential to appreciate how livestock contribute to household livelihoods.
8. Implement, at regular intervals, different types of specialized livestock surveys as recommended under the integrated survey framework of the *Global Strategy to Improve Agricultural and Rural Statistics*. The objective of these surveys address priority areas for investment to increase livestock production and productivity. These surveys could target herd composition and dynamics, feed availabilities, breeding, meat, milk and manure production or other specific issues.
9. Commit to undertaking ad hoc surveys through the Ministry responsible for Livestock to generate critical livestock information when considering alternative policies and investments.
10. Ensure that livestock is adequately represented in a national data platform for the dissemination of agricultural data and statistics, and in so doing enable easy access to national and sub-regional survey results and other relevant data.

To Regional, Pan-African Institutions and the International Community:

1. Encourage national governments to include animal health and disease-related data among the core data on agriculture identified by the *Global Strategy*.
2. Facilitate the adoption of common methodologies to estimate technical conversion factors, so as to allow cross-country comparison of livestock data.
3. Create a common data platform at the regional and pan-African level to follow and leverage the trends and dynamics of the livestock sector.
4. Develop methodologies to improve the quantity and quality of available livestock data, both from a statistical and institutional perspective.

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5. Facilitate the sharing of best practices in survey design and implementation among African countries in order to adequately include livestock in the integrated survey framework recommended by the *Global Strategy to Improve Agricultural and Rural Statistics*.
6. Provide financial and technical assistance to countries to undertake ad hoc surveys to generate critical livestock information when considering alternative policies and investments.

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REFERENCES

- Achoja F.O., P.C. Ike and P.O. Akporhuarch (2010) Economics of Veterinary Services Delivery among Commercial Poultry Farmers in a Market-Driven Economy: Evidence from Delta State, Nigeria. *International Journal of Poultry Science*, 912:1140–1145.
- Ahuja V., D. Umali-Deininger and C. de Haan (2003) Market structure and the demand for veterinary services in India. *Agricultural Economics*, 29: 27–42.
- Akter S., M.A. Jabbarand and S.K. Ehui (2003) Competitiveness and efficiency in poultry and pig production in Vietnam. Socio-economics and Policy Research Working Paper 57. Nairobi: ILRI.
- Alderman, H., M. Babita, G. Demombynes, N. Makhatha, and B. (2002). How Low Can You Go? Combining Census and Survey Data for Mapping Poverty in South Africa. *Journal of African Economies*, 11: 169–200.
- ALRMT, Arid Land Resource Management Project (2007) Livestock Survey in the Arid Land Districts of Kenya. Nairobi: Otpimax for the Office of the President.
- Ashagidigbi W.M., S.A. Sulaimanandand and A. Adesiyan (2011) Technical and Allocative Efficiency of Poultry Egg Producers in Nigeria. *Agricultural Journal*, 6: 124–130.
- AU-IBAR (2013) *A Tool for the Inclusion of Livestock in the CAADP Compacts and Investment Plans*. Nairobi: AU-IBAR.
- Bahta S.T. and S. Bauer (2007) Analysis of the determinants of market participation within the South-African small-scale livestock sector. Paper presented at Tropentag 2011, Utilisation of diversity in land use systems: Sustainable and organic approaches to meet human needs. Witzenhausen.
- Bandiera O., R. Burgess, N.C. Das, S. Gulesci, I. Rasul, R. Shams and M. Sulaiman (2012) Asset Transfer Programme for the Ultra Poor: A Randomized Control Trial Evaluation. BRAC Challenging the Frontier of Poverty Reduction/Targeting Ultra Poor (CFPR). Working Paper 22, Dhaka: BRAC.
- Bardasi, E., K. Beegle, A. Dillon and P. Serneels (2010) Do Labor Statistics Depend on How and to Whom the Questions Are Asked? Results from a Survey Experiment in Tanzania. Policy Research Working Paper, No. 5192. Washington, D.C.: World Bank.
- Bashir M.K., S. Schilizzi and R. Pandit (2012) Livestock and Rural Household Food Security: The Case of Small Farmers of the Punjab, Pakistan. Working Paper 1207. School of Agricultural and Resource Economics. Crawley: University of Western Australia, Australia.
- Beegle, K., C. Carletto and K. Himelein (2011) Reliability of Recall in Agricultural Data. Policy Research Working Paper, No. 5671. Washington D.C.: World Bank.
- Beegle, K., J. De Weerdt, J. Friedman, and J. Gibson (2012) Methods of household consumption measurement through surveys: Experimental results from Tanzania. *Journal of Development Economics*, 98: 3–18.
- Benin S., J. Thurlow, X. Diao, C. McCool and F. Simtowe (2008) Agricultural Growth and Investment Options for Poverty Reduction in Malawi. IFPRI Discussion Paper 794. Washington D.C.: IFPRI.
- Bocoum I., S. Yahaya, A. Issa and A. Zezza (2013) L'élevage et les conditions de vie des ménages au Niger. Une analyse descriptive de l'enquête sur les conditions de vie des ménages et l'agriculture. Niamey: Ministère de l'Elevage et Institut National de la Statistique.
- Bogale A., K. Hagedorn and B. Korf (2005) Determinants of poverty in rural Ethiopia. *Quarterly Journal of International Agriculture*, 44: 101–120.
- Chambers R.G. (1988) *Applied Production Analysis. A Dual Approach*. Cambridge University Press: Cambridge, UK.
- Costales A., N.T. Son, M.L. Lapar and M. Tiongco (2008) Determinants of Participation in Contract Farming in Pig Production in Northern Vietnam. Report 08–04, FAO Pro-poor Livestock Policy Initiative. Rome: FAO.
- Covarrubias K., L. Nsiima and A. Zezza (2012) Livestock and livelihoods in rural Tanzania. A descriptive analysis of the 2009 National Panel Survey. A paper of the World Bank-FAO-ILRI Livestock Data Innovation in Africa Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- CSA (2012) *Agricultural Sample Survey 2011/12. Report on Livestock and Livestock Characteristics*. Addis Ababa: Central Statistical Agency.
- CSO (2005) *The Living Conditions Monitoring Survey IV Report*. Lusaka: Central Statistical Office.
- CSO (2008) *Livestock Force Survey*. Gaborone: Central Statistics Office.
- Davis, B., P. Winter, G. Carletto, K. Covarrubias, E.J. Quiñones, E.J. A. Zezza, K. Stamoulis, C. Azzarri and S. Di Giuseppe (2010) A Cross-Country Comparison of Rural Income Generating Activities. *World Development* 38: 48–63.
- Deininger, K., C. Carletto, S. Savastano, and J. Muwonge (2012) Can diaries help in improving agricultural production statistics? Evidence from Uganda. *Journal of Development Economics*. 98: 42–50.
- Delgado, C., M. Rosegrant, H. Steinfeld, S. Ehui and C. Courbois (1999) Livestock to 2020: the next food revolution. Food, Agriculture, and the Environment Discussion Paper 28. Washington, D.C.: IFPRI.
- de Mel, S., D.J. McKenzie and C. Woodruff (2009) Measuring microenterprise profits: Must we ask how the sausage is made? *Journal of Development Economics*, 88: 19–31.
- Devendra, C. (2007) Constraint analysis to improve integrated dairy production systems in developing countries: The importance of participatory rural appraisal. *Tropical Animal Health and Production*, 39:549–556.

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- Dillon, A., E. Bardasi, K. Beegle, and P. Serneels (2012) Explaining variation in child labor statistics. *Journal of Development Economics*, 98: 136–147.
- DPS (2004) *Rapport de synthèse de la deuxième Enquête Sénégalaise Auprès des Ménages*. Dakar: Direction de la Prévision et de la Statistique, Institute Nationale de la Statistique.
- EC (2006) *Rural Development 2007–2013. Handbook on Common Monitoring and Evaluation Framework*. Directorate General for Agriculture and Rural Development. Bruxelles: European Commission.
- Elbers, C., J.O. Lanjouw and P. Lanjouw, P. (2003) Micro-Level Estimation of Poverty and Inequality. *Econometrica*, 71:355–364.
- FAO (2000) *Technical conversion factors for agricultural commodities*. Rome: FAO.
- FAO (2009) *The State of Food and Agriculture 2009. Livestock in the Balance*. Rome: FAO.
- FAOSTAT (2013) faostat.fao.org accessed, 12 September 2013.
- FAO and UNFPA (2012) *Guidelines for Linking Population and Housing Censuses with Agricultural Censuses*. Rome: FAO.
- Gelan A. and B. Muriithi (2012) Measuring and Explaining Economic Efficiency of Dairy Farms: A Case Study of Smallholder Farms in East Africa. *Agrekon: Agricultural Economics Research, Policy and Practice in Southern Africa*, 51: 53–74.
- Grace D., T. Randolph, O. Diall and P.H. Clausen (2008) Training farmers in rational drug-use improves their management of cattle trypanosomiasis: A cluster-randomised trial in south Mali. *Preventive Veterinary Medicine*, 83:83–97.
- GSS (2008) *Ghana Living Standards Survey 5. 2005/2006. Household Questionnaire, Part B*. Accra: Ghana Statistical Service.
- Heltberg, R. and F. Tarp (2002) Agricultural supply response and poverty in Mozambique. *Food Policy* 27: 103–124.
- Henning J., J. Morton, R. Pym, T. Hla and J. Meers (2009) Evaluation of strategies to improve village chicken production-controlled field trials to assess effects of Newcastle disease vaccination and altered chick rearing in Myanmar. *Preventive Veterinary Medicine*, 90: 17:30.
- Hentschel, J., J.O. Lanjouw and P. Lanjouw (2000) Combining census and survey data to trace the spatial dimensions of poverty. *The World Bank Economic Review*, 14: 147–165.
- Hurley R. (1957) Livestock data problems in the Census of Agriculture. *Journal of Farm Economics*, 39: 1420–1426.
- Iarossi G. (2006) *The Power of Survey Design: A User's Guide for Managing Surveys, Interpreting Results, and Influencing Respondents*. Washington D.C.: World Bank.
- ILO (2004) *Consumer Price Index Manual. Theory and Practice*. Geneva: ILO.
- Ishaq M., A. Farooq and U. Farooq (2007) Economies of scale in small ruminants farming in Southern North West Frontier Province-Pakistan. *Livestock Research for Rural Development*, 19(2).
- Jabbar M.A., S.K. Ehui and R. Von Kaufmann (2002) Supply and Demand for Livestock Credit in Sub-Saharan Africa: Lessons for Designing New Credit Schemes. *World Development*, 30: 1029–1042.
- Jabbar M.A., D. Baker and M.L. Fadiga (eds.) (2010) Demand for livestock products in developing countries with a focus on quality and safety attributes: Evidence from Asia and Africa. Research Report No. 24. Nairobi: ILRI.
- Jansen, G. B. and J. W. Wilton (1984) Linear programming in selection of livestock. *Journal of Dairy Sciences* 67:897–901.
- Joliffe, D. (2001) Measuring absolute and relative poverty: The sensitivity of estimated household consumption in survey design. *Journal of Economic and Social Measurement*, 27: 1–23.
- Kawagoe T., Y. Hayami and V.W. Ruttan (1985) The intercountry agricultural production function and productivity differences among countries. *Journal of Development Economics*, 19:113–132.
- LBS (2008) *2002/03 Household Budget Survey Report*. Maseru: Lesotho Bureau of Statistics.
- LDIP (2010a) Collecting Livestock Data: What, Who, Who Pays? Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2010b) Routine Livestock Data Collection in Uganda. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2010c) Routine Livestock Data in sub-Saharan Africa: Collection and Use. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2011a) Livestock Data: What Do Tanzania Stakeholders Say. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2011b) Livestock Data Survey of Participants in the 12th Livestock Donor Group Meeting. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2011c) Routine Livestock Data Collection in Tanzania. Brief. FAO-World Bank-ILRI-U-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2011d) Livestock Market Data: Collection, Dissemination and Use in Tanzania. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.

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- LDIP (2011e) Livestock Data: What Do Uganda Stakeholders Say. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2012a) A Critical Indicator: Livestock's Contribution to Gross Domestic Product. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- LDIP (2012b) Routine Livestock Data Collection in Zanzibar. Brief. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- Lesnoff, M., S. Messad, and X. Juanes. (2010) *12MO: A cross-sectional retrospective method for estimating livestock demographic parameters in tropical small-holder farming systems*. Montpellier: CIRAD.
- Lesnoff, M., R. Lancelot, C.H. Moulin, S. Messad, X. Juanès, and C. Sahut (2011) *Calculation of demographic parameters in tropical livestock herds – A discrete time approach with LASER animal-based monitoring data*. Montpellier: CIRAD.
- LID (Livestock in Development) (1999) *Livestock in Poverty-Focused Development*. Crewkerne: Livestock in Development
- Loos, T. and A. Zezza (2013) Collecting data on pastoralist livelihoods in the context of LSMS-ISA surveys. Designing and piloting a module on pastoralist households. Livestock Data Innovation in Africa Project. Working Paper. FAO-World Bank-ILRI-AU-IBAR Livestock Data for Better Policies Project. Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- MAAIF, Uganda Ministry of Agriculture, Animal Industry and Fisheries, Uganda Bureau of Statistics, FAO, ILRI and World Resources Institute (2010) *Mapping a Better Future: Spatial Analysis and Pro-Poor Livestock Strategies in Uganda*. Washington D.C.: World Resources Institute.
- MAAIF (no date) *District Livestock Data Reporting Format*. MAAIF, Entebbe.
- MAAIF and UBOS (2009) *The National Livestock Census Report 2008*. Entebbe: Uganda Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and Kampala: Uganda Bureau of Statistics (UBOS).
- MAHRH (2009) *Méthodologie de l'Enquête Permanente sur l'Agriculture*. Ouagadougou: Ministère de l'Agriculture de l'Hydraulique et des Ressources Halieutiques du Burkina Faso.
- Meganathan, N., K.N. Selvakumar, M. Prabu, A.S.S. Pandian and G.S. Kumar (2010) Constraint analysis of tribal livestock farming in Tamil Nadu, Tamilnadu. *J. Veterinary & Animal Sciences* 6: 12–18.
- MLFD (2010a) Medium-term Expenditure Framework 2010–11 — 2012–13. Vote 99. Dar es Salaam: Ministry of Livestock and Fisheries Development.
- MLFD (2010b) Livestock Data in Tanzania. Unpublished document. Dar es Salaam: Ministry of Livestock and Fisheries Development.
- MLFD (2012) Data Collection to Estimate Livestock Technical Conversion Factors in Tanzania. Proceedings of a Workshop held at MLFD on 8 November 2012. Dar es Salaam: Ministry of Livestock and Fisheries Development (MLFD).
- MLFD and LDIP (2011) New Perspectives on Livestock Data. Proceedings of a workshop on Production, Marketing and Consumption Statistics. Dar Es Salaam: Tanzania Ministry of Livestock and Fisheries Development and FAO-World Bank-ILRI-AU IBAR Livestock Data for Better Policies Project: Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- Murphy S.P., C. Gewa, L.J. Liang, M. Grillenberger, N.O. Bwiboz and C. G. Neuman (2003) School Snacks Containing Animal Source Foods Improve Dietary Quality for Children in Rural Kenya. *Journal of Nutrition*, 113:3950S–3056S.
- NBS (2010) *General Household Survey-Panel. Agriculture Questionnaires — Post-Planting Visit*. Abuja: National Bureau of Statistics.
- NBS (2012a) *National Panel Survey 2012/2013. Livestock & Fishery Questionnaire*. Dar es Salaam: National Bureau of Statistics.
- NBS (2012b) *2012 Population and Housing Census. Household questionnaire*. Dar es Salaam: National Bureau of Statistics.
- Nin A., S. Ehui and S. Benin (2007) Livestock Sector Productivity in Developing Countries: An Assessment. In R. Evenson and P. Pingalu (eds.) *Handbook of Agricultural Economics*. Amsterdam: Elsevier.
- NISR, (2010) *National Agricultural Survey 2008 – Report of National Data Analysis*. Kigali: National Institute of Statistics of Rwanda.
- Nouala S., U. Pica-Ciamarra, J. Otte and A. N'guetta (2011) Investing in Livestock to Drive Economic Growth in Africa: Rationales and Priorities. *Bulletin of Animal Health and Production in Africa*, 59: 383–391.
- NSO (2010) *Integrated Household Panel Survey 2010. Agriculture Questionnaire*. Lilongwe: National Statistics Office.
- OIE (2011) *Guidelines — FAO/OIE/WHO Annual Report — Year 2011*. Paris: OIE.
- Okello, P., F.K. Blum, U. Pica-Ciamarra, D. Baker and G. Simbila (2013) Administrative records for official statistics: food for thought on Uganda's livestock data. Poster delivered at the VI International Conference on Agricultural Statistics, Rio de Janeiro, October.
- Otieno D.J., L. Hubbard and E. Ruto (2012) Determinants of Technical Efficiency in Beef Production in Kenya. Paper presented at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguacu, August.
- Otte, J., Costales, A., Djikman, J., Pica-Ciamarra, U., Robinson, T., Ahuja, V., Ly, C. and Roland-Holst, D. (2012) *Livestock Sector Development for Poverty Reduction. An Economic and Policy Perspective*. Rome: FAO.
- Perry B. and K. Sones (2009) Improving the quality and availability of data to support livestock for development initiatives in sub Saharan Africa: Strategic Recommendations to the Bill and Melinda Gates

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- Foundation. Background document of the *Livestock in Africa: Improving Data for Better Policies*.
- Pica G., U. Pica-Ciamarra and J. Otte (2008) The Livestock Sector in the World Development Report 2008. Re-assessing the Policy Priorities. PPLI Research Report 08-07. Rome: FAO.
- Pica-Ciamarra U., J. Otte and C. Martini (2010) *Livestock sector policies and programmes in developing countries. A Menu for practitioners*. Rome: FAO.
- Pica-Ciamarra U. and D. Baker (2011) Supply and Demand of Livestock Data in sub-Saharan Africa: Evidence from a Stakeholder Survey. *African Statistical Newsletter*, 5: 32–35.
- Pica-Ciamarra, U., N. Morgan and D. Baker (2012) Core Livestock Data and Indicators: Results of a Stakeholder Survey. Working paper of the FAO-World Bank-ILRI-AU IBAR Livestock Data for Better Policies Project: Rome: FAO; Washington D.C.: World Bank; Nairobi: AU-IBAR and ILRI.
- Pica-Ciamarra U., D. Baker, N. Morgan, C. Ly and S. Nouala (2013) Investing in African Livestock: Business Opportunities in 2030–2050. Paper presented at the African Livestock Conference and Exhibition, Nairobi, June.
- Presser, S., M.P. Couper, J.T. Lessler, E. Martin, J. Martin, J.M. Rothgeb and E. Singer (2004a) Methods for Testing and Evaluating Survey Questions. *Public Opinion Quarterly*. 68: 109–130.
- Presser, S., M.P. Couper, J.T. Lessler, E. Martin, J. Martin, J.M. Rothgeb and E. Singer (eds.) (2004b) *Methods for Testing and Evaluating Survey Questions*. Chichester: Wiley.
- République du Mali (2007) *Recensement General de l'Agriculture (RGA) – Campagne Agricole 2004–2005. Principaux Resultats Définitifs*, Vol. 1. Bamako: Ministère de l'Agriculture, Ministère de l'Elevage e de la Pêche, Ministère du Plan et de l'Aménagement du Territoire.
- République du Niger (2007a) *Enquête Nationale sur le Budget et la Consommation des Menages 2007. Questionnaire Ménage*. Niamey: Ministère de l'Economie et des Finances et Institut National de la Statistique.
- République du Niger (2007b) *Recensement General de l'Agriculture e du Cheptel. Volume II. Resultats Definitifs (Volet Cheptel)*. Niamey: Ministère de l'Economie et des Finances et Institut National de la Statistique.
- République du Niger (2010) *Enquête Nationale sur les Conditions de Vie des Ménages 2010–2011. Questionnaire sur l'Agriculture et l'Elevage. Deuxième Passage*. Niamey: Ministère de l'Economie et des Finances et Institut National de la Statistique.
- Salami, A., A. B. Kamara and Z. Brixiova (2010) Smallholder agriculture in East Africa: trends, constraints and opportunities. African Development Bank Group Working Paper Series No. 105. Tunis: African Development Bank.
- Scholtz M.M., J. Bester, J.M. Mamabolo and K.A. Ramsay (2008) Results of the national cattle survey undertaken in South Africa, with emphasis on beef. *Applied Animal Husbandry and Rural Development*, 1:1–9.
- Sheppard, D., T. Stewart, C. Rothhaas, F. Lestina, E. Compton, J. Machowski and D. Smith (2013) *2010 Census Administrative Records Use for Coverage Problems Evaluation*. Washington D.C. United States Census Bureau.
- Siegel, P. B. and J. Alwang (2005) Poverty reducing potential of smallholder agriculture in Zambia: opportunities and constraints. World Bank Working Paper Series No. 85. Washington D.C.: World Bank.
- Simler, K. and V. Nhate (2005) Poverty, Inequality, and Geographic Targeting: Evidence from Small-Area Estimates in Mozambique. FCND Discussion Paper 192. Washington D.C.: World Bank.
- Somda J., K. Keita, M. Kamuanga and M.B. Diallo (2004) Diagnostic des systèmes d'élevage péri-urbain en Moyenne Guinée: Analyse socio-économique des exploitations en production laitière dans la commune urbaine de Labé Socio-economic. Working Paper No 3. Banjul: ITC (International Trypanotolerance Centre).
- Stokes, J.R., P.R. Tozer and J. Hyde (2007) Identifying efficient dairy producers using data envelopment analysis. *Journal of Dairy Science*, 90: 2555–2562.
- Thompson, S.K. (2012) *Sampling*. Chichester: Wiley.
- UBOS (2009) *The Uganda National Household Survey 2009/2010. Socio-economic Survey Questionnaire*. Kampala: Uganda Bureau of Statistics.
- UBOS (2011) *The Uganda National Panel Survey 2010/2011. Agriculture Questionnaire*. Kampala: Uganda Bureau of Statistics
- UNDP (2009) *Handbook on Planning, Monitoring and Evaluation for Development Results*. New York: UNDP.
- URT (2010) *National Sample Census of Agriculture 2007/2008. Preliminary Report*. Dar es Salaam: National Bureau of Statistics.
- WAHIS (2013) World Animal Health Information System. www.oie.int/wahis_2/public/index.php/home
- Zezza A., P. Winters, B. Davis, G.. Carletto, K. Covarrubias, L. and E. Quiñones (2011) Rural Household Access to Assets and Markets: A Cross-Country Comparison. *The European Journal of Development Research*, 23: 569–597.
- Zezza A., G. Federighi and G. Carletto (2013) Milking the data: Measuring household milk production in extensive livestock systems. Experimental evidence from Niger. Paper presented at the 59th ISI World Statistics Congress. Hong Kong, August.

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