Streamlining Conservation Agriculture into Private and Public Sector Systems

H. R. Mloza Banda, PhD
ICAAP-Africa Member
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Various studies in Sub-Saharan Africa have examined relevance and effectiveness of national agricultural policies with respect to implementation of Conservation Agriculture (CA). This synopsis observes that public and private investments will reach full potential if integrating production system change in agriculture sector policies is performed concomitantly with strategies determining the socio-ecological environment for farmers at national landscape scales. Efforts should recognize increased interest from governments, private sector, interest groups and the public in strategic information for decision-making, results and performance, new and/or repositioned involvement of women and the youth in CA-revitalized agrarian agenda

1. *Policy support and literacy.* Economic appeal and environmental potential for Conservation Agriculture (CA) has been pursued through support for sustainable land and water management, and climate change mitigation and adaptation frameworks under the aegis of the African Union/ New Partnership for African Development (NEPAD), Food and Agriculture Organization (FAO), Consultative Group on International Agricultural Research (CGIAR), African Conservation Tillage Network (ACT), and private philanthropy such as the Alliance for a Green Revolution in Africa (AGRA). These and other leading development organizations have proposed the establishment of agile coordinating and funding mechanisms pursued by national governments and their partners through robust national investment frameworks for CA. It is considered that policy and institutional frameworks set the level of ambition to be achieved from the economic, political, environmental, social, and cultural perspectives. Frameworks are necessary because while adaptations of the practical elements of CA to local conditions improve implementation and adoption, the effort may not always be to the desired degree (Kassam *et al*., 2014).

   The FAO, Common Market for Eastern and Southern Africa (COMESA) and Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), among others, have provided comprehensive overview of relevance and effectiveness of existing suite of agriculture and related national policies with CA juxtaposed, in the Africa region. This paper reiterates those policies but observes that at national levels, CA actors need to learn and understand the influence of different driving forces on agri-environmental dynamics and their interaction with policy as an important step for understanding opportunities for integrating CA principles, practices and impacts into sector policies and for monitoring progress in this

direction. Some fora have deemed environmental or socioeconomic impacts of CA not totally appropriate and subsequently contributed to a plethora of CA philosophies and opinions. This synopsis hastens to observe that policy development that integrates CA, like other past or future emergent issues, should evolve from addressing a single concern and environmental component, often restricted to target areas, to overarching policy dimensions, addressing different aspects of the same environmental domain or even including policies with multiple objectives. Studies show that existing agricultural and other policies pursuing productivity and environmental objectives at national levels provide scope for CA but support remains fragmented owing to the orthodox nature of institutional mandates and of agriculture education and research. Yet, the potential effectiveness of policy instruments is that they do not operate in isolation. Conservation Agriculture remains pivotal in continued efforts to reorient tenets of agricultural policy and programmes from agricultural resource conservation to agricultural environmental management and climate-smart action.

2. *Need for socio-ecological literacy.* Adopting CA essentially means literally altering generations of traditional farming practices and use of tools and implements that have determined the social and cultural fabric of African society. CA must be understood in the context of a transformational change in farming and livelihood systems and more than just a simple change in a crop production technique (Mloza-Banda and Nanthambwe, 2010). In the sense that farmers may not perceive 'external' and 'internal' driving forces influencing farming system change, policies and associated instruments that are comprehensively understood by those promoting system change, must be enunciated to farmers overtime, forthrightly and sufficiently. For instance, Sasakawa Global 2000 was first in recent times to demonstrate that cereal grains intensification under CA public-private partnerships increased yields in extensive national trials that lasted up to 6 years in Mali, Ghana, Ethiopia, Malawi and Mozambique (Ito *et al.*, 2007). The challenge remains to merge, reshape, and craft coherent systems of public and private farmer support initiatives for CA at national landscapes without the familiar approach of discrete projects with pre-determined outputs and time-frames whereas tillage-based agriculture evolved in multi-landscapes over generations.

   Literature is replete with the dichotomy of crop-livestock integration specifically with regards to CA, on 35% of Africa's territory comprising savanna grassland deemed suitable for cultivation of crops and livestock rearing. When appropriately stocked and managed in CA systems, livestock on the open veld or that under stall-feeding schemes has much to contribute to sustainable agriculture. Livestock herds and flocks provide an invaluable safety net to poor households and poor women, contributing to their diverse livelihoods portfolios. Yet, CA is faulted too readily, despite the evidence to the contrary, for creating new hurdles where farmers must address short-term trade-offs between using crop residues/ cover crops to enhance soil properties for improving production of staple crops or to feed livestock in-field, to cope with fodder deficits during the long dry seasons (Andriarimalala *et al*., 2013). Thus, there is need to

expound the concept of production landscapes and analysis of trade-offs and establishing frameworks for linking indicators that provide measures of biophysical or livelihood outcomes of CA implemented in appropriate landscapes. This includes categorizing diversity of land management CA systems nationally and the strategies for improving household livelihoods in each type of CA system.

It is cited simplistically that application of CA requires a change of "mindset" and this has been reinforced by emphasizing farmer learning and training against continued near exclusion of CA in formal education institutions. Adult household members appear ahead of their school-going children in their attempts to practice CA and indeed, often experiment the same with scanty guidance from extension agents who themselves lack practice and are ill-prepared to provide additional value and understanding. Conservation Agriculture requires embracing new knowledge, skills and an aptitude change that can be built in partnership with other knowledge systems. There is need to build the skills, insights and abilities of teachers and learners at all education levels and to link these efforts with wider global and national movements to empower local self-reliant CA development efforts. Thus, legislative, policy and practices dictate inclusion of CA in formal education knowledge systems so that learners' validation of CA and farmer-centered approaches are parts of the definition of indigenization of CA.

3. *Investment support*. There is need to evaluate investments in different settings for effectiveness and sustainability and a broad endorsement of the results by communities of practitioners operating in the CA value chain and a robust technical services infrastructure for CA. In line with their influence on farmers' behaviour, policies have been classified as mandatory, voluntary incentive-based or awareness-raising measures (Weersink, 2002). Such measures may be used to promote certain types of agricultural behavior; as incentives to farmers who engage in sustainable farming practices; or, guide the distribution of costs between farmers and national institutions. Often the tendency has been to foment mainstreaming of CA into policies without defining the integration measures and appropriate agri-environmental indicators to monitor such amalgamation. For instance, it is imperative to define whether what are needed are CA awareness-raising activities in a CA-mainstreamed gender policy or specific CA mandatory activities embedded in the mainstreamed gender policy along with identified bearer(s) of associated costs.

   The history of CA-relevant policy measures that can be incorporated into agriculture and other policies is relatively young, restricted to 'projects' impact areas, and often touching selected farming operations. Owing to a myriad of factors that have led to changes in rural demographic structure, farming can no longer be encouraged to depend on rudimentary tools and little more than family labour. In countries burdened with low mechanization levels, suitable policies and national mechanization strategies should complement successful introduction and up-scaling of CA. The private sector need to be courted to play a more proactive role in developing local

capacity for making available hardware services (manufacturing, fabrication, implements and traction options, repair and maintenance) and software services (availability, use and applications, financing and/or sharing schemes) for CA. The traditional "cost-share" or "up-front" membership subscription models of financial incentives are not universally suited for small and medium scale farmers to garner on-farm and off-farm benefits from permanence of changes in land management systems. Studies show that diverse options for structurally lowering input-output price ratios and more than one-shoe-fits all models for different socio-ecological landscapes should be put on the policy table (Marenya *et al*., 2015).

Opportunity for women and youth is consistently at the top of the development agenda in virtually every country on the continent. Women in sub-Saharan Africa constitute 80% of agricultural labour force producing 90% of the food and 50% of cash crops. It is the only region in the world where women are major contributors to both household and national food security and environment sustainability. In this region, where limited educational opportunities prevent youths from staying in school for very long, agriculture employs more than 90 percent of 15- and 16-year olds and about 80 percent of young people ages 24 and older remain in agriculture (Filmer, and Fox, 2014). Over decades, the latter have drastically shunned moribund farming tools and practices and continue to migrate to urban locations, while the former have remained with the drudgery of rural traditional farming. Conservation Agriculture should be seen as a potential source for the internal revitalization of agriculture by developing women's leadership for social and economic justice in the sector as well as a systematic skills development avenue for the youth so that they are gainfully engaged in agriculture or provide a pathway to productive employment in ancillary livelihood sectors. A supportive policy framework with sustainable agriculture as the genesis but transcending it needs to recognize women and youth as attendant social capital regime for economic growth.

Conclusion. There do not appear large discrepancies between the principles and practice of CA with policies of national governments and donors over resource-conserving productivity-enhancing agricultural strategies. However, this strategic congruency is initially being shared only by a restricted group of stakeholders aligned with agriculture or land ministries/ departments often subsumed under thematically changing short-term projects while private sector investment remains peripheral. It is recognized that national institutions are presently in the frontline of regional practice in respect to arrangements and processes for developing CA-related policy, institutional and investment frameworks. While considerable progress has been made, emphasis should include: (a) improving engagement of line ministries, departments, or local authorities; (b) ensuring that policy, institutional and investment initiatives in CA benefit from strong and broad political commitment; (c) securing the closest possible alignment between frameworks developed and national development strategies and donor support; (d) linking CA investments to resource allocation through national budget framework; (e) developing modalities and institutional arrangements for implementation of CA education and

training programmes; and, (f) warranting efficiency and influence of the related monitoring arrangements.

Disclaimer

The author has been engaged in consultations over national and regional policies and institutional arrangements relevant to Conservation Agriculture. The views expressed are purely those of the author and may not in any circumstances be regarded as stating an official position of the African Conservation Tillage Network (ACT).

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