

Organic Agriculture and HIV/AIDS: the Nutritional Response

Wright, J¹

Key words: HIV/AIDS, immune system, nutrition, organic, Sub-Saharan Africa.

Abstract

HIV/AIDS is devastating communities around the world and no more so than in SSA. It impacts equally in urban and rural areas, rich and poor. The rural poor – the nations' food providers – are ill-equipped to draw together resources for mitigating these impacts. The extra expenses of medicines, and funerals, means that rural farming families are forced to sell their capital assets, such as livestock, and land. The new farming workforce shifts to increasingly comprise children and the elderly, and traditional knowledge is lost. Through a review of literature and compilation of case studies, this research aims to deepen understanding and bring fresh perspectives and clarity on the role of organic agriculture and its relation to nutrition and food security, in preventing and mitigating the impacts of people living with HIV and AIDS in Sub Saharan Africa (SSA). It explores the notion that whilst there is no cure for HIV/AIDS, a locally-grown, nutritious diet is just as effective in mitigating the impacts as more expensive and hard-to-access pharmaceutical products. It goes on to identify the policies and practices required to support the widespread production of healthy foodstuffs for people living with HIV/AIDS.

Introduction: the agricultural challenge of HIV/AIDS in Sub-Saharan Africa

HIV/AIDS is devastating communities around the world and no more so than in SSA where it accounts for more than 60% of people (2.8 million) living with HIV. It impacts equally in urban and rural areas, wiping out swathes of the productive workforce. For rural farming families, this is debilitating: the extra expenses of medicines, and funerals, mean that already resource-poor households are forced to sell their capital assets, such as livestock, and land; the new farming workforce increasingly comprises children and the elderly while traditional knowledge is being lost. To respond to the HIV/AIDS challenge, agriculture is tasked with coming forth with low-cost, labour-saving techniques which generate accessible and nutrient-rich foodstuffs and medicines, and an income, appropriate for People Living With AIDS (PLWA). To provide such a response demands defining and fine-tuning the best and most appropriate of agricultural strategies.

Materials and Methods: a review of the literature

As well as searching science databases, a broad range of documentation was reviewed for the production of this report, from both the health and agriculture sectors. Literature in peer reviewed journals tended to be of two types: either policy assessments of the impacts and mitigation of HIV-AIDS on agriculture in general, or clinical analyses of the links between nutritional elements, pharmaceuticals and

¹ Henry Doubleday Research Association, Ryton Organic Gardens, Coventry CV8 3LG, England.
E-Mail jwright@hdra.org.uk, Internet www.gardenorganic.org.uk

HIV/AIDS in its various stages of progression. Grey literature, in the form of institutional and project reports, web-based papers, and anecdotal evidence, provided more applied and practical examples of project successes and challenges.

Whereas agriculture frequently takes low priority in rural livelihood debates, this literature acknowledges that one of the biggest impacts of the HIV/AIDS pandemic is on the productive base, and that the preservation of this base is crucial for the communities living in affected areas. The most notable observation on the literature reviewed relates not to what it contains but what has been omitted. On the one hand, there is clear realisation that HIV/AIDS affects agriculture, that the rural poor are particularly hard hit over the long term, and that the less resilient the community, the greater the impact. But the literature reviewed includes little reflection on the possible causes for the rural poor – and their state of health - being in such a vulnerable situation in the first place. There is relatively little debate on whether the orientation of previous and current agriculture and rural development policies have helped or hindered the current situation, be it export-oriented agriculture, privatising and disinvesting in rural extension services, encouraging migration and off-farm activities, or reorienting farmers to depend on off-farm inputs and credit schemes.

Similarly, in terms of mitigation, there is a clear realisation that action needs to take place at local level to improve nutritional security, to encourage a diverse and nutritious diet, to promote local-resource based, low-labour production techniques, to develop localised income-generating mechanisms and to strengthen local food access systems. Yet although these actions go against development policy trends of the past 30 years, there is little discussion on how to turn policy around. There is scant evaluation of the types of production approaches and systems that can best deliver the food needs required by PLWA, and no consideration of the differing quality of foodstuffs on the immune system, be it relating to the presence of pesticides or to organically-produced foods. There is also little evidence of a concerted effort to promote sustainable, smallholder agriculture across the board and to re-orientate agricultural policies to support this. Instead, the literature talks of 'mainstreaming' HIV/AIDS into existing policy and practice.

Results: the HIV/AIDS – nutrition – organic agriculture connection

Whilst there is as yet no verified cure for HIV/AIDS, medical treatment can delay the progression of the disease. Yet there remains a poor understanding within the medical sector of the full complexity of the human immune response (Ho, 2005). Nevertheless, there is wide acknowledgement that sound nutrition similarly delays progression of the disease through delaying the contraction of AIDS by HIV-positive people and building resilience of those with AIDS to opportunistic infections and diseases (Gillespie, 2006). It may also reduce the chances of HIV infection. Epidemiological studies show a strong relationship between micro-nutrients and HIV/AIDS progression, and the efficacy of ARV drug treatment is greatly increased by sound nutrition (Piwoz & Preble, 2000). Nutrition intervention to date is somewhat lagging behind this understanding. Research and practice tends to focus on food aid and food supplementation, with little support to date for the local production of a balanced, fresh, nutritious diet for PLWA. Similarly, medical treatment tends to focus on pharmaceuticals and supplements rather than make use of the vast network of traditional healers in SSA and their plant-based medicines for the alleviation of opportunistic infections and diseases (Kaboru et al, 2006). Because of the high treatment costs and difficulties with access, only a small percentage of PLWA are

currently in receipt of pharmaceuticals and supplements and are instead reliant on local capacities and resources (Willumsen & Kettaneh, 2005).

In terms of producing nutritious foodstuffs, organic agriculture is the singular farming approach which places health as an overriding objective. The health of human beings, animals and plants are seen as inseparable from the health and fertility of the soil, and health itself is not simply an absence of disease, but a state of resilient vitality. This conceptual base remains a challenge to demonstrate and prove under current scientific paradigms and methodologies. Nevertheless, there is growing evidence of the superior impact of organic food and farming over conventional, industrial production for strengthening the immune system and combating opportunistic infections. These impacts include the provision of a more nutritionally diverse diet (Johns et al, 2006), the avoidance of long-term micronutrient loss from the soil and crops (Davis et al, 2005), specific nutrient increases in organic foods including phytonutrients (Brand & Mølgaard, 2006), the absence of ingested pesticide residues (Winter & Davis, 2006), lower levels of fungal toxicity (Benbrook, 2005), lower levels of drinking water contamination, and absence of antibiotics and of food additives (Heaton, 2001). Holistic feeding studies, largely carried out on animals, indicate a positive effect of an organic diet on recovery from illness and infection and on the immune system in general (Worthington, 2001). As well as its nutritional benefits, the practice of organic agriculture is appropriate for the conditions of PLWA in that it encourages localised food production systems, minimises postharvest losses, optimises yield increases, regenerates the natural resource base, encourages the use of cheap or free local resources to substitute for purchased inputs and foods, and taps into the traditional knowledge base.

Fine-tuning organic agriculture to the needs and conditions of PLWA entails enhancing nutritional and medicinal benefits, focusing on labour saving techniques, and enabling income savings and/or generation. Organic techniques which specifically enhance nutritional and medicinal security include the production of nutrient-rich foodstuffs in home and community gardens, agroforestry and small livestock systems, as well as consideration of post-harvest activities. Savings can be made of labour, cost and time through the skilful use of traditional plant varieties and animal breeds, integrating soil fertility strategies and wild food foraging. The local production of plant medicines, and the enabling of local innovation and access to appropriate knowledge and resources are also key features of a nutritionally-adapted agriculture. In addition, organic agriculture can provide an income both through substitution of purchased foods, medicines and inputs, and income generation based on the marketing of local produce.

Discussion: The need for a paradigm shift in agriculture

The HIV/AIDS pandemic is exacerbated by the poverty situation in SSA, and any mitigation strategy needs to address the deep-running causes of poverty and ill-health. In this sense, the simple modification of already-existing mitigation programmes is insufficient to deal with the problem. Major donors acknowledge that a paradigm shift is required, but in practice actual change is negligible (Gillespie, 2006). Reasons for this inertia are identified as a lack of knowledge on ecologically-grounded agriculture and therefore inability to both vision and put into practice adequate policies, and a reticence to support smallholder agriculture because of its features of self-reliance and complexity. Major change would require a re-education and training throughout the agricultural sector, and decoupling of policy development from the interests of the corporate agriculture and food industry. Specific recommendations for mitigating the

impact of HIV/AIDS through organic agriculture comprise the broad scale support for smallholder agriculture, the promotion of organic agriculture throughout SSA, and its fine-tuning to meet the needs and conditions of PLWA.

Conclusions: policy recommendations

Strategies for the broad-scale growth of smallholder agriculture in SSA include empowerment of the rural poor to participate in decision-making and in agricultural research; improved access to land and water resources and rural infrastructure; strengthening of agricultural support services, including the reversal of decline in agricultural extension services, and improved delivery of information, credit and market access; reform of international agriculture and trade policies and of Ministries of Agriculture; and a guarantee of returns on agricultural innovation, in order to stabilise domestic prices and provide a fair price, which may involve protectionist strategies.

Strategies for promoting organic agriculture in SSA entail the integration of organic agriculture in agricultural policy and poverty reduction strategies; the development and rolling out of curricula in secondary and tertiary education and career development, on the science of ecology, the principles and practice of organic agriculture in the SSA context, and the management and use of traditional knowledge; the promotion and conservation of agro-biodiversity and regeneration of the natural resource base; the development of local innovation networks and participatory research methodologies; increased access to organic inputs, and removal of input subsidies for chemical products; research and development on: agro-ecology, soil fertility management, crop growth and health, yield performance, habitat management, plant breeding for vulnerable environments, plant protection, livestock breeding and adaptability to stress situations, on-farm water management, organic agriculture in the humanitarian context, building farm and food security resilience to disasters, documentation of success stories; and the development of local and regional markets for locally guaranteed and non-guaranteed organic products, consumer awareness raising, market information, local standards development

Strategies for fine-tuning organic agriculture to the needs of PLWA include an agronomic emphasis on soil fertility improvement: increased organic matter and soil microbial activity, timely mineralisation and nutrient availability; the development of labour-, time- and cost-saving technologies and practices both pre- and post-harvest; participatory research, innovation and training appropriate for widows and children; an emphasis and education on nutritional and medicinal plant and livestock components in the organic system; the development of appropriate, creative systems for linking production and consumption, in conjunction with awareness raising on food quality and human health; research on: comparative trials of organic food consumption and its impact on human health, the impact of pesticides on human health, improving the nutritional quality of organic foods in the SSA context; the promotion of the conservation and use of wild food resources; and adapted organic export models to enable participation of PLWA.

Acknowledgments

This study is a summary of an IFOAM publication intended to inform the debate for governments, development organisations and donors, on the contribution of organic food and nutrition in preventing and tackling the impacts of HIV/AIDS in SSA.

Acknowledgements go to Gundula Azeez, Petra Bakewell-Stone, Hervé Bouagnimbeck, Sam Burcher, Donald Kasongi, Innocent Balagizi Karhagomba, Ard Lengkeek, Georgina MacAllister, Sitali Manjolo, Mweshi Mukanga, Tanja Müller, Peter Murage, Linus Ndonga, Sam Page, Nicholas Parrott, Mai Phillips, Anton Rosenfeld, Gunnar Rundgrun, Mundie Salm, Dawn Stallard and Henk de Zeeuw.

References

- Benbrook C. (2005). Breaking the Mold – Impacts of Organic and Conventional Farming Systems on Mycotoxins in Food and Livestock Feed. State of Science Review. The Organic Center, USA.
- Brandt K. & J.P. Mølgaard (2006). Food quality. In: P. Kristiansen, A. Taji & J. Reganold (eds.) *Advances in Organic Agriculture*. CSIRO Publishing, Australia: 305-327.
- Davis D., M. Epp & H. Riordan (2005). Changes in USDA food composition data for 43 garden crops, 1950 to 1999. *Journal of the American College of Nutrition*, 23 (66): 669-682.
- Ho M.W., S. Burcher, R. Gaia & V. Veljkovic (2005). *Unravelling AIDS: the Independent Science and Promising Alternative Therapies*. Vital Health Publishing, Ridgefield, CT. 231p.
- Gillespie S. (2006). Understanding the Links Between Agriculture and Health. *Agriculture and HIV/AIDS. Focus 13, Brief 7, May 2006*. IFPRI, Washington DC.
- Heaton S. (2001). *Organic Farming, Food Quality and Human Health: A Review of the Evidence*. Soil Association, Bristol.
- Johns T., I.F. Smith & P.B. Eyzaguirre (2006). Agrobiodiversity, Nutrition and Health. In: Hawkes C. & M.T. Ruel (eds). *Understanding the links between agriculture and health*. IFPRI, Washington DC. p.12
- Kaboru B.B., T. Falkenberg & P. Ndubani (2006). Can biomedical and traditional health care providers work together? *Zambian practitioners' experiences and attitudes towards collaboration in relation to STIs and HIV/AIDS care: a cross-sectoral study*. *Human Resources for Health* 4:16.
- Piwoz E.G. & E.A. Preble (2000). *HIV/AIDS and Nutrition. A Review of the Literature and Recommendations for Nutritional Care and Support in Sub-Saharan Africa*. Washington DC. Academy for Educational Development (AED).
- Willumsen J. & A. Kettaneh (2005). *Nutrition, HIV and AIDS. HIV and AIDS Key Issues Guide*. Health and Development Information Team. DFID Health Resources Centre, London.
- Winter C.K. & S.F. Davis. (2006). Organic Foods. *Journal of Food Science* 71 (9): 117-124.
- Worthington V. (2001). Comparison of nutrient levels in organic food compared to non-organic. *Journal of Alternative and Complementary Medicine* 7(2): 161-173.