

Table of contents

Foreword	4
Food security for all the world's people <i>Dr Doug Parr, Greenpeace Chief Scientist</i>	
Acknowledgements	8
1 Methodology and approach	
1.1 Context	10
1.2 Aims and objectives	10
1.3 Scope and definitions	11
1.4 Research methods	16
2 The world grows organic.	
2.1 Estimating the extent of global organic production	18
2.2 External stimuli for the development of organic agriculture	21
2.3 Towards a typology of incentives and constraints to 'grow organic'	23
3 Regional perspectives	
3.1 Africa	36
3.2 Asia	45
3.3 Latin America	51
4 Key themes	
4.1 Productivity and sustainability	61
4.2 Organic agriculture and diversity	66
4.3 Natural methods of enhancing soil fertility	73
4.4 Natural regimes of pest and disease control	80
4.5 Markets and premia	90
4.6 Certification	93
4.7 Institutional and political issues	98
4.8 Social and cultural issues	101
5 Conclusions and recommendations	
5.1 Creating a coherent 'alternative' agricultural movement.	107
5.2 Promoting OAA: defining objectives	108
5.3 Global research and advocacy	108
5.4 Building local capacity.	109
Bibliography	112
Glossary of abbreviations and acronyms	128
Appendix 1 – Electronic resources for OAA	130
Appendix 2a – Research institutes and consultancies	137
Appendix 2b – NGOs and producer groups	138
Endnotes	144

List of case studies

Case Study 1 The Chagga Home Gardens (Mt. Kilimanjaro, Tanzania)	14
Case Study 2 Organic cotton production in India, Peru and Mali	24
Case Study 3 Cuba: towards a national organic regime?	27
Case Study 4 World Food Day Farmers' and Fishermens' Movement (Indonesia)	30
Case Study 5 Ambootia Tea Estate (Darjeeling, India)	35
Case Study 6 Zai: a traditional method for restoring degraded land	39
Case Study 7 Organic and ethical banana production	58
Case Study 8 New developments in rice production	63
Case Study 9 Ecological land restoration in Tigray	77
Case Study 10 Sekem (Egypt)	93

List of tables and figures

Table 1 Key aims, principles and management practices of organic farming	12
Table 2.1 Certified organic land by country (hectares)	19
Table 2.2 Certified organic land by country (% of agricultural land)	19
Table 2.3 IFOAM members by country	20
Table 2.4 Incentives and constraints to organic farming	23
Table 2.4 The sustainable agriculture and rural development prize	26
Table 3.1 Organic farming statistics for Africa	37
Table 3.2 African organic agricultural products on international markets	37
Figure 3.1 Illustration of Zai or planting pit	39
Figure 3.2 The push-pull method for controlling maize stemborer	42
Table 3.3 Organic farming statistics for Asia	45
Table 3.4 Organic farming statistics for Latin America	52
Table 4.1 Examples of yield increases attributable to adoption of OAA	62
Table 4.2 Risk reduction strategies of traditional farmers	66
Table 4.3 Annual soil loss (tons/ha) at Ibadan, Nigeria	67
Table 4.4 Effects of A. Albida on millet yield in Senegal	69
Figure 4.1 Influence of trees on maize cropping in Tlaxacal (Mexico)	72
Table 4.5 Nutrient management strategies	75
Table 4.6 Plants with pest controlling properties	78
Table 4.6 Premia generated by organic producers	81
Table 4.7 A flow chart for identifying synergies in OAA research	99
Table 4.8 Textures of folk knowledge	102

Foreword

Food security for all the world's people

Dr Doug Parr, Greenpeace Chief Scientist

The crisis in Argentina in late 2001 illustrated again a frustrating and unjust reality: there is no direct relationship between the amount of food a country produces and the number of hungry people who live there. In 2001, Argentina harvested enough wheat to meet the needs of both China and India. Yet Argentina's people were hungry. Argentina's status as the world's second largest producer of GM crops – largely for export – could do nothing to solve its very real hunger problems at home. For fifty years conventional agriculture has been getting less and less sustainable. Chemical pesticides, fertilizers and hybrid seeds have destroyed wildlife and crop diversity, poisoned people and ruined the soil. Now that the organic movement is taking off in the industrialised world, governments, international agencies and global agribusiness corporations must stop promoting this destructive system in the South. Instead, there must be coherent and long-term support – in practice as well as in principle – to enable the nascent ecological farming movement in poorer countries to continue to grow into the future.

The world is on the brink of a second 'Green Revolution', which – unlike the first – has the potential to truly live up to its name. This is not a revolution in biotechnology; still less has it anything to do with genetic engineering. Instead, it is a global move towards ecological agriculture, which promises to both feed a growing world population and to do so sustainably – without compromising the needs of future generations to feed themselves.

Working in tandem with nature and encouraging biodiversity and local self-reliance, this new trend towards organic and agroecological farming is vibrant through Africa, Latin America and Asia. Although

still largely overlooked by policy-makers, this movement presents a hopeful alternative to a world that would be dominated by corporate agrochemical giants and monocultural agriculture. And, as this report shows, organic farming is not simply a passing fad for consumers in the rich world. Put into practice in the South, it can increase food security, reduce poverty and protect environmental resources for the future – unlike its conventional alternative.

Organic increasing

This report identifies some of the positive trends currently emerging, for example:

- Latest estimates of land managed according to ecological principles vary from 15.8 to 30 million hectares (equivalent to about 3% of agricultural land in the South). This figure would almost certainly be much higher if de facto organic agriculture practiced by traditional subsistence farmers were to be included.
- Two thirds of new members of the International Federation of Organic Agricultural Movements (IFOAM) come from the South.
- International agencies – principally the UN's Food and Agriculture Organisation (FAO) and the Centre for Trade and Development (UNCTAD) – have woken up to the potential of organic farming in raising farmers' incomes, creating jobs and enhancing food security.
- Cuba has been moving towards a nationwide organic system, and 65% of its rice and nearly 50% of fresh vegetables are now produced organically. Argentina now has the largest area of land under organic cultivation of any country in the world after Australia.

Greater diversity

Maintaining agricultural biodiversity is vital to ensuring the long-term food security of all the world's people. This report also shows that agroecological farms exhibit a much greater array of biodiversity than conventional chemical-dependent farms, with more trees, a wider diversity of crops and many different natural predators which control pests and help prevent disease. In many parts of the South, the diversity of crop species on organic and agroecological holdings typically numbers in the hundreds, in stark contrast to the monoculture encouraged by conventional systems. For example:

- Indigenous farmers in Peru cultivate more than three thousand different types of potato.
- More than five thousand varieties of sweet potato are cultivated in Papua New Guinea.
- In West Java, researchers have identified more than 230 species of plant within a dual cropping system, which includes 'agroforestry' home gardens and outfields. In Mexico, the Huastec Indians manage a number of plots in which up to 300 species are cultivated. Areas around the house may contain between 80-125 useful species, many with medicinal properties.

This diversity is maintained through traditional seed-swap networks, which are now being extended and encouraged by the organic and agroecological movement. Whilst global industrial agriculture has led to a situation where the world's population gets 90% of its food calories from a mere 15 species of crops, organic and agroecological farmers are providing a vital service in maintaining genetic diversity for the future – a service increasingly threatened by genetically-modified pollution and corporate biopiracy. The maintenance of a wide range of crops provides food security throughout the year, an overwhelmingly important consideration for

peasant farmers, who are intuitively aware of the dangers of monocropping.

Working with ecology

This report shows how organic and agroecological approaches to agriculture are helping to conserve and improve farmers' most precious resource – the topsoil. In contrast to the problems of hardening, nutrient loss and erosion experienced by conventional farmers, organic managers across the South are using trees, shrubs and leguminous plants to stabilise and feed the soil, dung and compost to provide nutrients, and terracing or check dams to prevent erosion and conserve groundwater. There is no 'one-size-fits-all' strategy, and the best approach varies with local expertise and ecological conditions.

Increasing yields

The widespread assumption that converting to organic means a decline in yields has been proven to be false, a conclusion supported by overwhelming evidence contained in this report. Case studies from many different countries – involving radically different practices, local conditions and crops – show dramatic increases in yields as well as benefits to soil quality, a reduction in pests and diseases and a general improvement in taste and nutritional content of agricultural produce. For example:

- In Brazil the use of green manures and cover crops has increased yields of maize by between 20% and 250%.
- In Tigray, Ethiopia, yields of crops from composted plots were between three and five times higher than those treated only with chemicals.
- Yield increases of 175% have been reported from farms in Nepal adopting agroecological management practices.
- In Peru the restoration of traditional Incan

terracing has led to increases in the order of 150% for a range of upland crops.

The importance is not just that yields are increased – important as that undoubtedly is – but that the increases are much more under the control of the farmers and communities that produce them, in contrast to a high input agricultural model where the benefits go to the equipment and chemical manufacturers and seed merchants.

Economic drivers

Across the South, engagement with the lucrative and rapidly growing organic foods market in the industrialised world is still the main driving force behind the development of the certified organic sector. Organic certification can generate big premia for primary producers, especially from export markets. Although some governments are now recognising the export potential of organic produce, its development so far has been driven almost exclusively by the NGO sector – often despite official hostility.

Remaining challenges

This report goes on to show that some key challenges remain, however. These include the following issues:

- Hostility from conventionally minded Southern governments and established corporate and bureaucratic interests are still holding back the potential of organic and agroecological agriculture.
- Many Southern-based NGOs promoting organic and agroecological approaches face crippling funding shortages, and are prevented from continuing their work often for want of very small amounts of money in comparison to that spent in the promotion of conventional agriculture.
- Mechanisms for transferring indigenous knowledge from one locale to another need further development and resourcing.

- The overwhelming majority of Southern organic produce is still sold as unprocessed primary commodities, leaving poorer farmers still exposed to the vagaries of world markets, and meaning that the benefits of processing and value-adding remain in the North.
- Much Southern-based organic production is for export to the industrialised world, raising the issues of ‘food miles’ and how best to protect local food security and self-reliance. However, local and national organic markets are developing in many poorer countries, notably Brazil, Egypt and Argentina.
- Expertise in certification is still overwhelmingly concentrated in the industrialised world, and achieving certification is a major barrier to many farmers in poor countries who lack literacy and other skills and facilities necessary.

What is needed

This report makes some clear and practical recommendations for how organic and agroecological agriculture should be supported and promoted. Some of these are highlighted below.

- Governments in the South should rethink the promotion of artificial pesticides and fertilisers on poorer farmers through extension workers, subsidies and media campaigns, and at the very least remove some of the barriers to NGO activity that currently hinder the growth of the organics sector. At best, Southern governments should begin to re-orient their priorities – educational, institutional and legal – towards promoting ecological and sustainable agriculture.
- Where *de facto* organic farming is practised, it is vital to help farmers develop self-confidence in their traditional knowledge so that they do not immediately switch to chemicals once they can afford them, as a

result of having been told for years that industrial farming is 'more modern'.

- Security of land tenure is essential for farmers to have sufficient incentive to develop long-term organic management strategies, and in areas where inequality of ownership is especially pronounced land reform will be necessary for ecological farming to become widespread.
- Much greater support must be devoted to those grassroots NGOs and projects that are the driving force behind the development of organic agriculture in the South. This requires a further mobilisation within Northern-based agencies to develop their own projects and work with Southern-based partners, and – crucially – greater financial support from the relevant funding bodies.
- Various successful projects are beginning to transfer the economic benefits of food processing to organic farmers in the South. These include the making of fruit into preserves in the Andes to the extraction of sunflower oil from hand-powered mills in Kenya. More resources and investment in these frequently low-tech solutions could have significant paybacks for ecological farmers across the Third World.
- Better links need to be fostered between different disciplines and approaches within the 'alternative' agricultural movement – bringing together (for example) foresters, researchers, livestock producers and horticulturalists in regional, national and international networks.
- The development of certification capacity in the South – by governments working in tandem with established NGOs – needs to be boosted to prevent the need for costly external inspections.
- Joined-up thinking between the organic and fair trade movements could be crucial in

how the movement develops over the coming years, and developing synergies between social and environmental objectives.

- In addition, an agreement within the organic movement itself is needed on the inclusion of wider social and environmental criteria such as 'food miles' and workers' rights.

Looking to the future

The dominant international worldview amongst policy-makers and opinion-formers still holds that food security for a growing world population can only be achieved by promoting ever more intensive chemical-dependent agriculture. The evidence from this report is that this viewpoint is dangerously flawed.

Firstly, the relationship between food security and food production is complex – famines occur because people lack the money to buy food, not solely because their own crops have failed. Secondly, chemical-dependent agriculture is fundamentally unsustainable. It exchanges long-term ecological health (involving issues like biodiversity and topsoil quality) for short-term productivity gains, and new developments in the genetic manipulation of plants and animals are set to worsen this disastrous trajectory. Thirdly, food security is endangered by encouragement for farmers to opt for high yielding mono-crops requiring substantial inputs. If the crops fail farmers are in danger of losing their land to cover bad debts – further contributing to rural-urban drift in the South.

Ultimately, we believe the key aim at a practical level must be to knit together the different aspects and drivers of the organic and agroecological approach into a coherent international movement which is capable of providing an alternative to the conventional system. As ecological agriculture becomes more successful economically, and an increasing number of farmers throughout the South decide – independently or with assistance from NGOs – to jump off the chemicals treadmill, the chances of this real Green Revolution succeeding become greater every day.

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