



PART I

SUMMARY

INTRODUCTION



SUMMARY

The present Workshop built on a previous meeting which took place in March 2007 at Newcastle University, UK, entitled:

‘The Importance of Improving Soil Conditions for Water, Plant Nutrients and Biological Productivity to Sustain Agricultural Growth under Rising Population Pressure and a Changing Climate’.

Reasons for concern are that, in many situations, current common agricultural practices - notably tillage and other inappropriate land management - have resulted in deterioration of soils that restrict yields, profitability and sustainability of agricultural land uses. These are matters of special concern in the warm/hot sub-tropics and tropics in the face of rising pressures of population growth and the anticipated likely problems associated with climate change.

At the Newcastle meeting participants had considered that a paradigm-shift towards conservation-effective agricultural systems (as exemplified by well-managed crop rotation and mulch-based zero-tillage systems) would be essential if agricultural growth is to be achieved and sustained.

Planning of this second Workshop began immediately after the conclusion of the Newcastle meeting. In the fifteen months between the Workshops, further examples worldwide of good land husbandry practices based on the ‘no-till’ paradigm mentioned above have come to be grouped together under the generic heading of ‘Conservation Agriculture’, whose development and spread across the world is actively encouraged by the Food and Agriculture Organization of the United Nations.

Prior to the second Workshop, a technical paper, entitled *‘Underpinning Conservation Agriculture’s Benefits: the Roots of Soil Health and Function’* was sent to prospective participants. Its chapter-headings are: (1) Introduction - Challenge; (2) Components of soil productivity; (3) Some adverse effects of ‘conventional’ tillage agriculture; (4) Key features of optimum Conservation Agriculture; (5) Impacts of CA; (6) Hindrances to progress; (7) CA in sub-



optimal, problem areas; (8) Thinking unconventionally; (9) Key areas for further investigation; (10) Conclusions.

As an introduction to the forthcoming meeting, a short technical note complemented that produced for the first Workshop (see above) with a definition of Soil Health, arising from the biological nature of soils, and emphasizing the requirement to maintain sufficient supply of organic matter as a substrate for biotic activities within soils.

The basic intention of this second Workshop was to discuss, define and propose modalities for ‘mainstreaming’ CA appropriately into regional, national and even local policies, plans and programmes, so that the improvement and sustainability of livelihoods of both land and people would be encouraged, facilitated and supported as the norm rather than the exception.

Two introductory sessions described the organizational and technical backgrounds of the meeting. These were followed by three sessions of Power-Point presentations of CA examples: from Latin America (Brazil; Paraguay; Argentina); from Asia (China; Kazakhstan; DPR Korea); and from Africa (Tanzania and Kenya; Tunisia; Swaziland; Madagascar; and an overview of emerging lessons from Africa as a whole).

Three sessions were dedicated to discussions in three parallel Working Groups: (1) Science and Technology; (2) Field practice and Development; (3) Policy and Financing. The purpose was to discuss and marshal the information which had been presented, and to provide - to the plenary group and to the team drafting the report on the outcome of the Workshop - an input from each of the special-topic groups under the sub-headings: Principles and Issues; Investors and Opportunities for Investment; Cross-sector Knowledge-brokering; Contributions to an Action Plan.

The results of their discussions and recommendations were presented to, and discussed in plenary sessions, and the agreed compilations transmitted to the Drafting Team. A draft Action Plan was prepared and presented, again in plenary session, for comments by the three subject-matter Working groups. The draft plan was amended accordingly, and the final draft version was then adopted by the participants.

The finalized Action Plan, entitled ‘*A Framework for Action*’, provides a concise summary of the presentations and discussions, and the recommendations that arose from them, moulded into statements of the central concerns and the characteristics of CA which can effectively address them. Goals and strategies for effective action – both agronomic and organizational – are set out under the main headings: Science and Technology Development; Underpinning Scaling-up of Conservation Agriculture; Creating Supportive Policies, Putting in Place Incentives, and Tapping Resources. Each of these is subdivided into: Strategic Issues - Goals - Priority Actions.

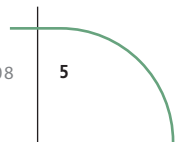


Under the heading 'Next Steps' it records that the Workshop participants recognize the value of joint action and wish to contribute to the emergence of greater and sustainable institutional and human capacities to:

- Acquire, evaluate, share and disseminate accurate, unbiased and diverse **knowledge** about the principles, practices and impacts of conservation agriculture;
- Raise **understanding** in governmental circles, professional organizations and the general public of the benefits, limitations and solutions relating to CA;
- Identify, share, enhance and give more ready access to multidisciplinary **expertise** on CA; and
- Support diverse **initiatives** for research, extension, advocacy and evaluation of CA that can advance the state of the art and the effective application for CA.

Participants wish to establish and sustain a **multi-stakeholder knowledge management system** that will be suited to the needs of diverse users, and in particular of farmers who can benefit from more appropriate and effective CA practices. They wish to set up a system of interlinking web-based system of 'Communities of Practice' with some overarching identity and common purpose, and which will engage a variety of agencies, professional organizations, and publics to acquire mindsets and create programmes more supportive of CA. Possible areas of focus for specific constituent CoPs would be: Knowledge-generation and exchange for CA; Advocacy for CA among the public and decision-takers; Training and information-exchange support for CA initiatives in the field; Education for CA through curriculum improvements in primary and secondary schools, plus enrichment of university and professional education. A Facilitating Group is envisaged to both initiate such a process and prepare both a Policy paper on CA, and an Analytical paper on CA's relative costs and benefits.

At the conclusion of the two-day meeting, the 96 participants from 40 different countries agreed that progress had been made towards putting their agreed Framework for Action into operation.





INTRODUCTION

The present Workshop builds on a previous Workshop which took place in March 2007 at Newcastle University, United Kingdom, entitled:

*'The Importance of Improving Soil Conditions for Water,
Plant Nutrients and Biological Productivity
to Sustain Agricultural Growth under Rising Population
Pressure and a Changing Climate'.*

The Newcastle Workshop was organized by the Tropical Agriculture Association (TAA) in collaboration with the World Agroforestry Centre (ICRAF), Association of Applied Biologists (AAB) and the Universities of Reading, Newcastle, Nottingham and Durham.

A short background paper, distributed prior to the meeting, set out the reasons for concern that, in many situations, current common agricultural practices have resulted in deterioration of soil qualities that restrict both yields, profitability and sustainability of agricultural land uses, matters of special concern in the tropics and sub-tropics.

The 57 participants, from a range of countries and of national and international institutions, considered the agro-ecologic and socio-economic aspects of sustaining landscapes' capacities to yield vegetation and water. They discussed the implications of three keynote presentations showing experiences with integrated soil-system management in Latin America, Africa and Asia, which were complemented by an overview of other positive advances in the tropical and sub-tropical regions. These showed positive examples of principles and practices of how degradation of land and livelihoods might also be reversed elsewhere.

They considered that a paradigm-shift towards conservation-effective agricultural systems (as exemplified by well-managed mulch-based rotational zero-tillage systems) is essential if agricultural growth is to be achieved and sustained.



Key factors determining sustainability were identified as: (a) biological activity in the soil which, with adequate and ongoing provision of organic materials, is capable of maintaining soils' porosity and productivity on a recurring basis; and (b) decision-making by farm families, which determine their management of the land they rely on for their livelihoods.

To develop these concepts further, Newcastle Workshop participants considered that an innovative, interactive and inter-disciplinary meeting of farmers and their representatives, governments, policy-makers, international aid agencies, private-sector entities, researchers, extension agencies, civil society organizations, and others, should be an important focus for a follow-on international meeting to be held in 2008¹.

THE ROME WORKSHOP

Planning of the second Workshop began immediately after the conclusion of the Newcastle Workshop. In the fifteen months between the Workshops, further examples worldwide of good land husbandry practices based on the 'no-till' paradigm mentioned above have come to be grouped together under the generic heading of 'Conservation Agriculture' (CA), whose development and spread across the world is actively encouraged by the Food and Agriculture Organization of the United Nations. Although the original intention had been to hold the second Workshop in Nairobi, Kenya, because of public-security concerns it became necessary to change the venue of the Workshop, which was kindly hosted by FAO/UN at its headquarters in Rome.

Prior to the second Workshop, a technical paper, entitled '*Underpinning Conservation Agriculture's Benefits: the Roots of Soil Health and Function*' was sent to prospective participants. Its chapter-headings are: (1) Introduction - Challenge; (2) Components of soil productivity; (3) Some adverse effects of 'conventional' tillage agriculture; (4) Key features of optimum Conservation Agriculture; (5) Impacts of CA; (6) Hindrances to progress; (7) CA in sub-optimal, problem areas; (8) Thinking unconventionally; (9) Key areas for further investigation; (10) Conclusions (see Appendix 1 for the technical paper).

As an introduction to the forthcoming Workshop Agenda, a short note complemented that produced for the first Workshop (see above) with a definition of Soil Health, arising from the biological nature of soils, and emphasizing the requirement to maintain sufficient supply of organic matter as

¹ *Extracts from the: Synopsis of the Workshop entitled: The Importance of Improving Soil Conditions for Water, Plant Nutrients and Biological Productivity to Sustain Agricultural Growth under Rising Population Pressure and a Changing Climate. 30-31 March 2007, Newcastle University, organized by the Tropical Agriculture Association in collaboration with ICRAF, AAB and the universities of Reading, Newcastle, Durham and Nottingham.*



a substrate for biotic activities within soils (see Appendix 2 for the Workshop Technical Background and Agenda).

Also in the fifteen intervening months, public and political concern had been rising on a number of globally-significant topics: notably, rising/high costs of fossil fuels and their impacts on prices of food and other commodities; the ongoing plight of the rural poor, exacerbated by their shortages of food and funds; rising levels of carbon dioxide in the atmosphere and anticipated effects of global warming on growing conditions and water supplies.

It is now increasingly recognized that, as a justification, there is firm evidence from a range of different combinations of agro-ecologic and socio-economic situations that well-applied CA can contribute effectively to addressing among others:

- Increasing pressures to cultivate land which was earlier considered unfit for such purpose;
- Damaging effects of tillage;
- Excessive oxidation of organic matter and release of excess carbon dioxide to the atmosphere;
- Food-insufficiency and/or -insecurity;
- Water-shortages;
- Droughts, soil erosion, floods.

The basic intention of this second Workshop was to discuss, define and propose modalities for ‘mainstreaming’ CA appropriately into regional and national and even local policies, plans and programmes, so that the improvement and sustainability of livelihoods of both land and people would be encouraged, facilitated and supported as the norm rather than the exception.

WORKSHOP OBJECTIVES

Following recommendations made at the conclusion of initial Workshop at Newcastle University, UK, on 30 and 31 March 2007, the organizers of this Workshop have invited stakeholders concerned with agricultural development in the tropics, subtropics and elsewhere to consider the demonstrated potentials of Conservation Agriculture (CA) to improve soil health, and hence productivity and sustainability, as a basis for crop and agriculture intensification and managing ecosystem services. The Workshop objectives are:

1. To describe the principles of Conservation Agriculture and demonstrate its benefits for farmers and societies to widen attention of potentially-supportive decision-makers in the broad fields of Field Practice & Development; Science & Technology, and Policy & Financing.



2. To discuss, suggest and agree the chief forms of interlinking decisions and action which would provide positive encouragement of, and support to, farmers to make and sustain their transition to beneficial CA systems as most appropriate to their different agro-ecological and socio-economic situations;
3. To pave the way for comparable forums to develop and function at continental, national and local levels;
4. To favour the development of an inter-connected 'Community of Practice' around the subjects pertain to and the benefits deriving from Conservation Agriculture.

WORKSHOP FORMAT

The Rome Workshop comprised the following sessions²:

Session I comprised a Welcome speech, and information about the objectives, process, agenda and expected outcome of the Workshop

Session II set the technical scene with a global overview on Soil Health and Conservation Agriculture, based on the two previously-sent background documents (see Appendices 1 and 2).

Session III saw presentations of CA examples from Latin America: Brazil; Paraguay; Argentina.

Session IV, from Asia: China; Kazakhstan; DPR Korea.

Session V, from Africa: Tanzania and Kenya; Tunisia; Swaziland; Madagascar; emerging lessons from Africa.

Sessions VI - VIII were devoted to discussions in three parallel Working Groups – 1. Science & Technology; 2. Field Practice & Development; 3. Policy & Financing – and the preparation of their special-subject reports back to the plenary group, each under the sub-headings: Principles and issues; Opportunities for investment, and Investors; Cross-sector Knowledge-brokering; Contribution to an Action Plan.

Sessions IX – X were presentation and discussion of these three reports, and transmission to the Drafting Team of an Action Plan.

² A CD of all the PPT presentations is in the inside of the back cover



Session XI saw the presentation of the first draft of the Action Plan.

Session XII: The draft Action Plan was discussed by each Working Group from its particular perspective.

Session XIII: Each Working Group submitted its comments on the draft Action Plan to the plenary, and passed them on to the Drafting Team for final adjustment of the Action Plan.

Session XIV was a viewing of technical posters and other publications, while the drafting Team completed its work.

Session XV: Adoption of the Action Plan, and Closure of Workshop.

