



## PROCEEDINGS



**Responding to the global food security challenge through coordinated land and water governance**

**Proceedings of the joint GWP-ILC-IWMI workshop  
15-16 June 2015, Pretoria, South Africa**

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## Foreword

We are pleased to introduce the Proceedings and findings of a 2-day workshop on Coordinated Land and Water Governance, jointly organised on 15-16 June 2015 in Pretoria by our three organisations – GWP, ILC, and IWMI.

The workshop brought together a group of practitioners with the right mix of expertise, interest, gender, country, and regional diversity to present and discuss land and water governance from various angles and scales.



It included presentations at the global level; continental level from Africa, Asia, and Latin America; from river basins (Limpopo, Nile, Niger); and national level (Indonesia, India, Nepal, Venezuela, South Africa, Burkina Faso, Malawi). It included themes such as groundwater; transboundary rivers; large-scale land-based investments; gender; and indirectly, indigenous people issues; ecosystem and natural resources and energy (bioenergy)

The workshop offered land and water constituents a platform to talk to each other and to understand each other's view point. The presentations provided ample endorsement and illustration of how coordinated land and water makes sense especially where achieving or maintaining food security is a priority. The discussions generated substantial results and recommendations for future actions, and participants unanimously considered it to be an excellent cross-sector learning opportunity.

Big things start small. And so this workshop is a first step towards an ambitious joint initiative on coordinated governance of land and water and its role in food security. The workshop has shown the relevance and importance of a coordinated

approach. It has provided compelling case stories, identified gaps to fill, areas that need attention.

We would like to thank Dr Madiodio Niasse, GWP Technical Committee member for initiating and organising this workshop; Dr Jan Cherlet, ILC, Dr Danka Thalmeinerova, GWPO, for their support in bringing this workshop to fruition; and GWP South Africa and IWMI for hosting the workshop and making it such a success.

We now look forward further GWP, ILC, and IWMI building on the outcomes of this workshop and strengthening and expanding this collaborative partnership on coordinated land and water governance.

**Mohamed Ait-Kadi**, GWP TEC Chair

**Michael Taylor**, ILC Director

**Timothy O. Williams**, WMI Africa Director

## Responding to the global food security challenge through coordinated land and water governance

### 1 Coordinating land and water matters

Feeding the world's growing population and finding the land and water to grow enough food continues to be one of the biggest challenges for the 21<sup>st</sup> century. Estimates suggest that production will need to increase by 60 to 110 per cent in the next 40 years in order to keep pace with demographic growth and changing consumption patterns. Past performance has been encouraging as global agricultural production increased 2.5 times between 1960 and 2000 and until recently this reduced food commodity prices. Achieving this came from increasing the productivity of land and doubling fresh water withdrawals with only limited expansion of the total cultivated area. Most important was the application of Green Revolution methods, such as high yielding crop varieties combined with intensive use of fertilisers and pesticides, and promoting irrigated agriculture.

Can this growth be replicated over the next 40 years? If current production practices continue estimates suggest that an additional 5,000 km<sup>3</sup> of water will be needed and 1-1.4 billion hectares of new land for cropping and livestock and it is questionable whether these resources are available. This is an enormous task for both water and land managers who will need to reach projected food production with fewer land and water resources.

**...over the past 25 years the international discourse on water resources has largely ignored land as an integral part of water management even though land management is embedded in the principles of IWRM**

An integrated approach is now well accepted in many countries as an effective means of managing water resources when water is scarce. But over the past 25 years the international discourse on water resources has largely ignored land as an integral part of water management even though land management is embedded in the principles of integrated water management (IWRM). Land and water are clearly symbiotic but in most countries they are traditionally managed as if they are independent endowments. A recent GWP Perspective Paper (2015) argued that this 'silo' approach is no longer acceptable. If sustainable global food security is to be achieved in the future, the paper suggested that immense benefits, such as resource use efficiency and equity of access and use, can come from better coordinating the way we think, plan, govern, and manage these two resources.

The purpose of this workshop was to bring together researchers, land and water professionals, and policy-makers from Global Water Partnership (GWP), International Land Commission (ILC), GWP, and the International Water Management Institute (IWMI) networks to reflect on the linkages between water and land, and to examine ways in which these two resources could be better coordinated to benefit food production. Case studies were presented on the successes and challenges of establishing joint policy, legal frameworks, and practices as a basis for discussion. These ranged from global, regional, basin, national to the local level.

Objectives of the workshop were to:

- Create a space for ILC members, GWP partners, and other interested organisations to share different perspectives (from science, law, policy-making, and practice), from different geographical settings and levels, to discuss the dimensions of coordinating land and water governance in terms of the current global food security challenge.

- Share positive and negative experiences of coordinating land and water governance and practice and its impact on food security, people's livelihoods, and ecosystem services
- Provide evidence and case studies for a GWP Background Paper as the next step in promoting the case for coordinating land and water governance
- Use the publications to initiate a global debate on the need, options, and benefits of coordinating land and water governance.

The expected outcomes from the workshop included:

- More clarity on the essential differences between land and water as natural resources, and on their interdependencies/connections in real life
- More clarity on the legal links between water rights and land tenure, in particular in statutory water permit systems, and implications for the current 'lawful' disempowerment, especially of poor women's water rights
- Better understanding of the benefits and limitations of sectoral (uncoordinated) approaches to land and water governance in efforts to improve food security, combat poverty, and enhance ecosystem services
- Better understanding of the enabling factors and the barriers to coordinated land and water governance
- Better understanding of politically feasible policy and institutional reforms that can be used to promote coordinated land and water governance
- More clarity on what the 'water people' can expect from, and contribute to the mission of the 'land people', and vice-versa.

The immediate expected outputs of the workshop included:

- Publication of the proceedings of the workshop,
- Identification of a global venue/forum/space where the discussion on Coordinated Land and Water Governance can be continued.

## 2 The workshop

This two-day workshop brought together 25-30 people with wide ranging expertise, interest, gender, country, and regional diversity. Presentations covered many levels – global, continental, and sub-regional from Africa, Asia, and Latin America; river basins including the Limpopo, Nile, and Niger Rivers; and national from Indonesia, India, Nepal, Venezuela, South Africa, Burkina Faso, and Malawi. Thematic coverage included groundwater; transboundary rivers; large-scale land-based investments; gender and indigenous people; ecosystems and natural resources; and renewable energy.

This publication is a synthesis of the workshop papers together with overall conclusions and the proposals for the next steps to be taken in promoting coordinated land and water governance.

## 3 Framing the land and water nexus

Land and water are typically dealt with, governed, and managed as independent endowments. Although IWRM formally calls for land to be duly taken into account in water management, land issues (land rights, land governance) are mostly absent in water debates. In recent years, in the wake of the 2007-2008 food and energy crisis and the related global rush for farmland, more and more voices started to advocate for the need for a coordinated approach to the governance of land and water –two increasingly strategic resources.

The workshop's first session first session examined the rationale and supporting evidence for a paradigm shift toward coordinated land and water governance. Specific questions included:

- What is the scientific basis upon which a stronger emphasis on coordinated land and water governance could be justified? Are the facts and figures and trends behind the narrative for a changing course toward more emphasis on coordinated governance of land and water was solid enough?
- What does “coordinated” governance of land and water exactly mean?
- What are the risks or missed opportunities when land and water are managed in isolation?
- What are the potential gains from a coordinated approach?

Three papers were presented:

[Coordinating land and water governance in the context of world food security](#) (GWP Perspectives Paper No.7)

*Authors: Madiodio Niasse, GWP/TEC and Jan Cherlet, ILC Secretariat*

This keynote paper suggested that it has long been recognised that land and water are key strategic and inseparable resources for achieving food security. Yet water resources and land tenure, use planning, and management are mostly disconnected. Over the past 25 years, the international discourse on integrating water resources management has largely ignored land issues. Today, in the water sector the idea of taking a ‘silo’ or fragmented approach to managing limited and scarce water resources would seem archaic. This paper argued that in order to meet the challenges of achieving food security in the future in a sustainable manner, this ‘silo’ approach to managing land and water is equally archaic and that immense benefits can come from coordinating the way we think, plan, govern, and manage these two strategic resources. The experiences gained from integrating water resources management could provide the catalyst for coordinating land and water governance and management.

[Towards voluntary guidelines for people-centred land-water tenure: The untapped synergies between rights-based land and water governance](#)

*Author: Barbara van Koppen, IWMI*

In 2012, the UN Committee on World Food Security (CFS) endorsed the ‘Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of Food Security’ (VGGT). But in spite of the importance of water in matters affecting land, there is little mention of it in this document.

This paper explored whether and how people-centred approaches and human rights values that underpin the VGGT can be better applied in the water sector and how more recognition of the land-water interface can support this. This is elaborated for participatory approaches in which people, especially the rural and peri-urban poor, better oversee the many interdependencies of natural resources and their multiple uses than the compartmentalised public sector. Further, human rights values are discussed for the development of land-bound water infrastructure, and tracing the upcoming debates about a core minimum water service level that includes small-scale productive uses. Lastly, entitlements to land and to naturally available water resources are compared. While the water sector should replicate the current strong recognition of customary land rights to customary and informal water entitlements, an important difference is discussed as well: states are water regulators in a public interest. In this capacity, they should also to protect water entitlements by the vulnerable in negotiations about large-scale land-based investments through procedural and water prioritization arrangements.

[Ecosystem services mapping as a framework for integrated resource management](#)

Author: Chris Dickens IWMI

This paper highlighted the policy complexities of managing natural resources, including water, in South Africa where there are 67 Acts of Parliament comprising 500 pages of legal text, that make reference to some aspect of resource management. In 2006 the South African Environmental Outlook (SAEO) stated that “*comprehensive and generally sound environmental regulatory regime is in place*” and that “*there has been a steady increase in the budget allocation for environmental management at both the national and provincial levels*”. However this has not led to improved management. The National Spatial Biodiversity Assessment reported that 34 percent of terrestrial systems and 82 percent of rivers are still under threat. This was blamed on a failure to adopt a holistic approach to planning, a failure to acknowledge the value of natural resources in development planning, poor coordination, and also the increased tendency to delegate responsibility to the local level where there is insufficient capacity and support for implementation. A potential solution was offered by the EU funded “*Afromaison*” project which set out to provide guidance and a model for Integrated Natural Resource Management (INRM), positing that even IWRM was inadequate as it did not attend to all resources.

**In summary**

- There is need to further reflect on the boundaries of the conceptual framework on coordinated land and water governance.
- Scale matters. While the debate on land and water governance at global level can be stimulating, water and land management actions and practices happen at the local and meso-scales.
- The debates on land and water governance need to be linked to outcomes, such as food security. Land and water are critical resources for food security, and the question that deserves further attention is how a coordinated approach to governing these resources helps achieve better food security outcomes.
- It is important to identify and document success stories in order to promote a coordinated approach at the level of governments and other key decision-makers and stakeholders.
- While there is enough scientific knowledge to support the need for a coordinated approach, the social and political dimensions deserve further investigation

**4 Large-scale investments**

The world has witnessed a surge in large-scale land acquisitions (also referred to as ‘land grabbing’) since the food and energy crisis in 2007-2008. Developing countries – especially in Africa – are the primary targets for these land deals. Initially understood to be only about land, it is now clear that it is equally about water. This is being seen as a new dimension of what is known as the ‘virtual water’ trade. This session examined the water dimensions of large-scale land deals. Specific questions included:

- What is known about the magnitude, drivers, early impacts, and recent trends in large-scale land deals?
- What is known about the water dimensions involved in land deals? This includes assessing water as a driver for land acquisition, impacts of water availability on land deals, and water rights and governance.
- What are the problems/risks if large-scale land deals ignore water resources?
- How does a coordinated approach to land and water governance help to respond more effectively to possible opportunities, challenges and risks associated with large-scale land deals?

- Are there concrete examples to provide answers to the above questions?

Five papers were presented:

### [A global perspective on land-scale land and water deals: governance implications](#) (PowerPoint presentation)

*Author: Ward Anseeuw, CIRAD and University of Pretoria*

This presentation builds on the database of the Land Matrix – a global and **independent land monitoring initiative** established in 2009 to keep track of large-scale transnational land deals (<http://www.landmatrix.org/>). The released portion of the database relates to 870 land deals covering an area of 54.5million hectares, of which 31.8 million are under contract. Although these figures only represent a fraction of the real magnitude of large-scale and deals that have taken place over the last decade, they provide a plausible description of the features, drivers, and trends of the phenomenon. The Land Matrix database shows that Africa is the main target of large-scale land acquisitions. Africa accounts for 600 of the 870 land deals and the related 65 percent of surface areas acquired by investors. Among the top 20 target countries for large-scale land deals, 9 are in Africa. While Western countries are the main investors/land acquirers in Africa, emerging and Middle-Eastern countries are upcoming.

The current global rush for agricultural land in developing countries, which started in 2007-2009, occurred in a context of a triple crises – food, energy, and finance. The main drivers were hence initially agro fuels (to respond to oil price hikes), forestry (for palm-oil and carbon sequestration), and food crops. Today biofuel hype is slowing down, while food appears to be the main driver of recent land deals.

A key feature of large-scale land deals monitored by the Land Matrix is that only a small proportion (8 percent) of the land acquired is currently under production.

The Land Matrix database contains relatively limited information on water: only 25 to 30 percent of recorded land deals have information on water. Land deals with information on water are generally those that have reached the development stage. In other words, water is really factored in and its central role recognised when the acquired land started to be exploited.

As confirmed by Anton Earle's paper, river basins such as the Nile, Niger, Volta, and Senegal, are among the primary targets of land deals, meaning that the phenomenon is equally about land and water. The fact that water tends to be ignored in land deal agreements/contracts poses additional challenges for water and land governance in targeted countries.

### [Land acquisitions: How will they impact transboundary waters?](#) (PowerPoint presentation)

*Author: Anton Earle, SIWI*

*This presentation is based on the report by Jägerskog, A., Cascao, A., Hårsmar, M. and Kim, K., (2012), [Land Acquisitions: How Will They Impact Transboundary Waters?](#); Report Nr. 30, SIWI, Stockholm.*

The current wave of large-scale, trans-national, land-based investments started after the global food crisis 2007-2008. The phenomenon is, to a large extent, driven by the lack of water and/or land in investing countries, and the perception of relative abundance of water and land in countries where investments are happening. Other key drivers include the 'real' as well as 'perception' of climate change; the availability of cheap labour, and the context of weak legislation in some of the land-and water-rich countries.



In spite of the lack of reliable data, consistent observations indicate that water is often ignored (or taken for granted) in large transactions; while related costs and benefits unevenly accrue at different scales, equity, poverty, and gender dimensions are often not considered. Limited data availability often prevents answers to key questions such as: What are the investments for, and in what proportions: Local food? Food export? Energy (biofuels)? Mixed use development (dams for irrigation + hydro energy)? Speculation (i.e. not using land productively)? What water is targeted: green, blue, and/or transboundary? Key messages include:

- Land investment is a water investment
- Water is often presumed to be included without explicitly being mentioned in land lease agreements
- Regional Economic Communities (RECs), River Basin Organisations (RBOs) and regional organisations have little or no role in land acquisitions on record to date. Large land deals will, however, very likely impact their mandate and ability to function.
- There is no international framework for regulating large-scale cross-border investments in land and water resources. The UN Convention on International Watercourses (1997) is not clear about direct water use by outside actors. Article 6 factors relevant to equitable and reasonable use are:
  - The social and economic needs of the watercourse States concerned
  - The population dependent on the watercourse in each watercourse State.
- The type of water (green water or blue water and the intensity of use) used for the land investments determines its effect on transboundary water management
- Water used for irrigation in land leased by foreign parties does not feature in the transboundary discussions in many, if not all, shared basins
- Cultural ties and migration plays a role, with links between countries following historical patterns (e.g. MIDROC Group of Saudi Arabia has 6 projects in Ethiopia)
- Water needs should be put into the land acquisition contracts in order to clarify the water requirements of the investors' projects and to regulate their water use
- Sustainable water use should be acknowledged explicitly in the international standards for responsible agro-business investments.

### [Bio-energy: Large scale agriculture investments in Africa – Emerging perspectives of food security](#)

*Author: Ruhiza Jean Boroto, FAO*

The preliminary findings of a study indicate that between 2000 and 2012, approximately 3.4 million hectares of land were acquired across Africa for large-scale agricultural investments. Some 50 percent of the land was acquired in six countries: Ethiopia (15 percent); Mozambique (11 percent); Tanzania (9 percent); Ghana (6 percent), Mali (5 percent), and Zambia (4 percent). The study also found that 68 percent of the land acquired was for biofuels, 26 percent for food crops, 3 percent for cotton, and 3 percent for livestock. Food crops (rice, sugarcane, maize, wheat, and vegetables) and biofuels are mostly cultivated by investors.

The potential benefits of such investments to the host countries include increased agricultural productivity leading to improved national food security and rural household incomes; infusion of capital, technology and know-how; increased employment; and improved social amenities. However, the large area being devoted to biofuels means there is an issue over the balance between food

security and bioenergy production. This paper presented the FAO's Bio-energy and Food Security (BEFS) approach, which is a tool that is designed to help countries design and implement sustainable bioenergy policies and strategies, by ensuring that bioenergy development contributes to agricultural and rural development in a climate-smart way, and fosters both food and energy security.

### [Land and water governance in the context of foreign direct investments in agriculture in sub-Saharan Africa](#)

*Author: Timothy Olalekan Williams, IWMI*

Since the oil, financial, and food crises of 2008, sub-Saharan Africa has witnessed a marked increase in large-scale investment in agricultural land. The drivers of this investment are varied and include growing food, water, and energy insecurity as well as social and economic interests of investors and recipient countries. The shape of these investments and their eventual outcomes are equally influenced by the existing land and water governance systems in the host countries. Based on field-level research conducted in Ghana and Mali which covered six large-scale agricultural investments, this paper analysed the current land and water governance systems through the lens of land and water acquisition and initial outcomes. It highlighted missed opportunities for sustainable and equitable large-scale agricultural land investments due to uncoordinated governance systems and failure to rigorously apply detailed rules and regulations that are already in place. It offered suggestions for revamping land and water governance to promote large-scale investments that will lead to equitable distribution of benefits and sustainable management of natural resources.

### [Implementation of AU Assembly Declaration on Land Issues and Challenges in Africa](#) (PowerPoint presentation)

*Reflections on the relevance of outcomes of the 2014 inaugural conference on land policy in Africa*

*Author: Rashid Mbaziira, AUC/GIZ*

Africa has an abundance of fertile land and freshwater resources which are under-utilised. At the same time, there is increasing global convergence on land and water as key strategic resources that are at times highly disputed within and between nations. This presents both opportunities and challenges for Africa. Many African Union Member States are yet to fully recognise the significance of land in their development planning, particularly land governance and administration. But there is a noticeable continental policy shift since 2005 towards strengthening land rights and tenure; increasing the productivity of land; and improving livelihoods. These efforts have yielded critical political commitments and initiatives for improving land governance including:

- In 2009 the Framework and Guidelines (F&Gs) on Land Policy in Africa, was endorsed by the African Ministers responsible for agriculture and land outlining the importance of making improvements in land sector coordination, administrative systems, and sector financing for both policy formulation and implementation. The document highlighted the urgent need to develop and implement a monitoring system and mechanisms for land policy formulation and implementation.
- The Declaration of the Assembly of the African Union on Land Issues in Africa endorsed the F&Gs. This presents AU Member States with a framework to address issues of mutual concern, such as ensuring that investments in agricultural land promote inclusive and sustainable development.
- In 2011, The Nairobi Action Plan on Large Scale Land-based Investments (LSLBI) urged the development of principles to encourage sound and sustainable investments in land, as well as guiding fiscal policy.
- In 2009 the inaugural Strategic Plan and Roadmap of the Land Policy Initiative aimed to assist AU Member States to implement the Assembly *Declaration on Land Issues* in line with the *F&Gs on*

*Land Policy in Africa* to achieve socio-economic development, peace, and security, as well as environmental sustainability.

- The institutionalisation of a land policy research platform; and convening – biannually – a policy and learning event to promote evidence-based land policy making and implementation, both geared towards deepening capacity for land policy in Africa through improved access to knowledge and information.

Recognising these interventions as critical to releasing Africa's development potential and sustaining growth, and acknowledging the need for evidence that backs up Africa's land governance needs, are important steps towards delivering tangible benefits of land and water governance. It is crucial that efforts are intensified to accomplish the mission of the Land Policy Initiative to "*ensure all users have equitable access to land and security of all land rights*". Furthermore, it is imperative that close linkages are established to formulate, review, and implement policies and governance arrangements for land and related resources, such as water, forests, and wetlands. Such an approach will enhance integration and coherence in pursuing a wide range of linked thematic priorities; leveraging resources for accelerated progress; and providing a mechanism for coordination, mutual support, and deepening the impact of interventions. This is key, not only to achieving sustainable use of natural resources, but also to advancing the well-being of Africa's people, environment, and economy.

For more information on Africa's Land Policy Initiative, see: <http://www.uneca.org/lpi>; more information on the Africa Land Policy Conference, see: <http://www.uneca.org/clpa>

### In summary

- While still very important, the speed of large-scale investments in land is slowing down.
- Only a limited number of reported land deals are governed by signed contracts, and few concluded deals reach the anticipated production level.
- Water is seldom mentioned in land deal contracts and as a result only a small proportion of the land deals in the Land Matrix contain information on water.
- Large-scale land deals do have significant impacts on water availability and water quality, on rainwater, surface water, and groundwater. The cumulative impacts on water of individual land deals need greater attention.
- Large-scale land deals, which are also about water, show the importance of a coordinated approach to the governance of land and water.
- Nevertheless the institutional and legal environments at country and river basin levels do not always facilitate a shift towards an integrated approach to land and water.
- Countries with the weakest governance systems are typically those which are primarily targeted in large-scale land deals. But the global rush for land and water should be seen as a unique opportunity to improve national and river basin governance of these two increasingly strategic resources.

## 5 Groundwater and land governance

Groundwater water resources are at risk in many regions of the world. This is not only due to increased levels of groundwater abstraction but also the impacts of major changes taking place in land use, such as agricultural expansion and intensification for food and biofuel production. This session discussed the rationale for integrating land use governance and groundwater management. Specific questions included:

- How does land use change affect groundwater resources? Conversely, how does groundwater availability and quality affect land use?
- How can improved coordination help achieve better and more sustainable outcomes?
- What are the obstacles to coordinated governance of groundwater and land? How to overcome them?

Two papers were presented:

[Links between land use and groundwater – Governance provisions and management strategies](#) (GWP Perspectives Paper No. 6)

*Author: Stephen Foster, Senior Adviser GWP and Jan Cherlet, ILC*

Groundwater is an increasingly important resource for urban and rural potable water-supply, irrigated agriculture, and industry, in addition to its natural environmental role of sustaining river flows and aquatic ecosystems. But major changes in land use that impact groundwater are taking place, as a consequence of population growth, increasing and changing food demands, and expanding biofuel cultivation. The link between land use and groundwater has long been recognised, but has not been widely translated into integrated policies and practices. This paper argued that a common understanding of groundwater–land and land–groundwater interaction is needed to facilitate cross-sector dialogue on governance needs and management approaches, targeted at sustaining water resources and enhancing land productivity. Sharply focused land-use management measures can produce significant groundwater quality and quantity benefits at relatively modest cost, and improving integrated governance will be crucial to ensuring an acceptable harvest of both food and groundwater from the available land.

### **Groundwater governance and its implications on land use – The case of Fadama areas of Kebbi State, Nigeria**

*Author: E.O. Longe, Universite of Lagos*

Nigeria has extensive groundwater resources. While rural water supplies come almost exclusively from groundwater sources, irrigated agriculture is the biggest groundwater user consuming an average of 5.5km<sup>3</sup>/year or 69 percent of the total withdrawal. Demand for groundwater is increasing and conflict among competing uses is growing.

Groundwater governance operates at three level – Federal, State, and Local Government. All three share responsibility for water resources governance. This situation has led to fragmentation and duplication of roles and responsibilities with each level of government pursuing its own independent water agenda. The basic data available on groundwater is inadequate which adds to the problems of effective governance. Groundwater monitoring and abstraction enforcement within the sector is diverse, diffuse, and weak. .

There is need for groundwater governance that takes into consideration policy, legal, regulatory, and institutional mechanisms that ensure a sustainable and integrated approach to water resources management. Tools ranging from technical, legal, and administrative need to be developed to facilitate more informed and ordered development of groundwater resources in order to avoid uncontrolled allocation and over-exploitation.

#### **In summary**

The two papers demonstrate the urgent need for coordination between groundwater and land use because of the obvious connections between the two. This is not a new issue, it has been known for some time. But little has been done to plan land and groundwater use in a coordinated manner. As the demand for

groundwater grows, establishing a process of coordination will be vital in order to ensure the sustainability of groundwater aquifers.

## 6 Experiences in Africa

Africa is often perceived as the continent where the world's largest unused or underdeveloped land and water resources are located. An illustration of this is that Africa is the primary target for acquiring agricultural land. But Africa is home to many millions of impoverished people and the population continues to grow. Africa's land and water resources are needed to feed its indigenous population, improve energy security, and combat poverty. This session used case studies from across the continent to highlight and discuss land and water governance challenges. They address questions such as:

- What are the problems/challenges associated with disjointed management of land and water resources?
- What are the benefits of adopting a coordinated approach to the management of land and water, in response to the pressure from foreign land acquisition, and improving the performance of indigenous family farming?
- What can we learn from case examples (successful examples and failures)?

Two papers were presented:

### [Development of agricultural irrigated lands in Burkina Faso](#)

*Author: Mouhamadou Tiemtore, GWP-WA*

This paper focused on the potential for irrigated farming in Burkina Faso which has a population of 15 million and is located in the heart of West Africa with a unimodal rainfall pattern and annual average rainfall between 500mm and 800mm. The rural sector dominates the national economy, which employs over 86 percent of the population. Agriculture produces a range of basic food and cash crops some of which go to export. Most cropping is rain-fed but the potential for irrigated farming is substantial but is as yet poorly developed. Land and water are resources that have separate governance at national level even though the need for these resources to be managed together is vital for successful irrigation. Land tenure at a local level defines the rights to water, meaning that access to and control over water is conditioned by access to secure land tenure.

### [OXFAM global land and water programmes](#)

*Authors: Everlyne Nairesiae and Rudo Sanyanga, OXFAM*

Oxfam as an international NGO, continues to respond to community needs in land and water governance, and works with partners to deliver programmes in most rural and marginalised communities in the World. It promotes land, water and other natural resource rights for local communities in order to improve their livelihoods and participate in decision-making processes. Land and water governance programmes are currently implemented separately but the need for a more coordinated programmatic approach is gaining attention within the organisation. It has continuously been observed by Oxfam that its land or water governance programmes have demonstrated strong linkages and similarities in implementation strategies and with successful initiatives having direct and indirect positive impact on the lives of communities. This paper described land based and water governance work in Africa in the Limpopo Basin, and also in Asia in the Mekong, and the Indus basin. Oxfam's programmes are designed and implemented through a rights-based approach that is participatory and makes women's rights the core of these initiatives.

### In summary

Only two papers were available on experiences in Africa but each confirmed the current practice of supporting land and water governance as independent resources even though they were clearly symbiotic in the irrigation systems in Burkina Faso and in other parts of Africa. Each expressed a need for coordination of these two resources to benefit food security.

The discussions stressed the need to address the knowledge gap concerning the implications of tenure security on water use efficiency and on water productivity. Some land tenure arrangements in irrigation schemes could de-incentivise water savings (e.g. precarious tenure rights). Another key point raised is whether pushing for integration of land and water would not in some cases create new boundaries that would leave out other key sectors. To avoid such difficulties, the concept of coordination needs to be flexible and allow interactions of varying intensities, ranging from exchange of knowledge, mutual consultations between sectors, to complete integration.

Another key point of discussion is whether concerns should focus on trying to fix the lack of alignment between land water management or address the governance failures in land and in water. It is clear that it would be counter-productive to try to coordinate the management of the two resources when each of them is marred with governance failures.

## 7 Experiences in Asia and Latin America

Land and water resources are also under severe pressure Latin America and Asia. While Asia is faced with high population densities, dwindling groundwater resources, closing river basins, increased landlessness, and land fragmentation; Latin America's biggest problem remains the high level of inequality. This session discussed the land and water governance challenges in the context of Latin America and Asia, and possible similarities and differences with Africa. Case studies were used to address the following questions:

- What are the problems/challenges associated with disjointed management of land and water resources facing Asia and Latin America today?
- What are the benefits of adopting a coordinated approach to the management of land and water, in response to unsustainable natural resource use (Asia) and inequities in resource access (Latin America)?
- How can coordinated land and water governance help tackle the challenge of improving the performance of indigenous family farming?
- What can we learn from case examples (successful examples and failures)?

Three papers were presented:

### [Integrated land and water management in the Yacambu-Quíbor Project, Venezuela](#)

*Author: Hervé Jegat, CIDIAT-UCLA*

This paper described how improving land management practices in one river catchment has made more water available for irrigation in another catchment where land was fertile but water was in short supply.

The Yacambu watershed and the Quíbor valley are located in the western part of Venezuela. The Quíbor valley is a fertile agricultural zone with a semi-arid climate, while the Yacambu watershed, with abundant water, is a tropical humid forest. The Quíbor valley possesses exceptionally favourable conditions for high quality and economic value vegetable, fruit, and livestock production. But only 3,000 ha of the potential 21,500 ha in the valley is currently irrigated because of acute groundwater shortages. The Yacambu-Quíbor

water transfer scheme was initiated as long ago as 1973 to transfer water from Yacambu to Quíbor valley. It consists of a dam on the Yacambu River and a 25 km diversion tunnel into the Quíbor valley. Progress over the past 40 years has been slow. However a conservation programme in the Yacambu watershed has controlled agricultural soil losses and land erosion and minimised the sediment supply which helps to ensure the future reservoir storage on the Yacambu River. This storage will augment the limited groundwater available in the Quíbor valley. At the same time an aggressive programme to control and regulate the groundwater extraction in the Quíbor Valley was implemented as the aquifer has been depleted since the 1960s.

### [Just in time – Chances for a holistic approach for land and water governance in Cisadane sub-watershed area, Bogor District, Indonesia](#)

*Author: Mardha Tillah, RMI, Indonesia*

To achieve its vision to ensure that women and men have sovereignty over land and natural resources, RMI (The Indonesian Institute for Forest and Environment) has developed two approaches that at first sight appear unconnected. One involved fun activities to engage younger members of the community and the second was organising community activities targeted at older generations.

For local and indigenous communities both approaches are essential in their struggle to obtain recognition of their rights over land and natural resources. Implementing these two approaches in parallel has become an important learning for RMI in looking at the environmental governance processes as a large holistic picture which includes coordination of land and water governance.

Through a number of projects that combined these two approaches, the river was seen as an indicator of the land governance conduct. The quality of land governance is linked to the river flows and this directly affects the irrigation distribution, and the quantity and quality of the irrigation water that the peasants obtain from the river.

This paper described the benefits from a grass roots approach which has taken a holistic approach to watershed management and it provided evidence that water and land are naturally inseparable components that support people's lives, especially in providing food. The sub-watershed area of Cisadane located in the Bogor District was used as a case study.

### [Community-led land and water management in Nepal](#)

*Author: Jagat Basnet, CSRC Nepal*

This paper explored how land and water governance is coordinated in Nepal, the lessons learned and the challenges that governance systems need to address priority development issues. The author argued that promoting community-led land and water resource management was vital in order to realise environmental sustainability, food security, and the assurance of social and economic rights of the farmers whose livelihoods depend heavily on subsistence farming.

#### **In summary**

These widely contrasting examples affirmed the benefits of coordinating land and water governance at all levels for the benefit of sustainable development and food security. The Quibor Valley case shows the relevance of coordination can be in the form of payments for ecosystem services: as the upper valley is faced with severe land degradation with risks of rapid siltation of the Yacumba reservoir. An ecosystem services payment scheme is considered whereby farmers in the lower Quibor Valley would pay compensation to farmers in the upper valley to adopt farming practices that reduce land degradation, erosion, and preserve

the ecosystem around the reservoir of the Quibor Dam. The various presentations made show that governments are in fact more active in managing, and governing blue water (groundwater and surface freshwaters) than green water (rainwater), an aspect to be taken into account in further elaborating the concept of coordinated land and water governance. The presentations stress the importance of monitoring water use, on the basis of which corrective measures to prevent overusing water resources can be considered.

### 8 A gender perspective

Despite the increasing feminisation of farm labour in the developing world, less than 5 per cent of women have access to secure land rights. In the few cases where women enjoy secure tenure rights, farm size tends to be much smaller than that of men (with the exception of Africa's matrilineal societies). According to FAO, closing the gender gap in agriculture would result in substantially increasing crop yields on land owned by women, translating into to a 2.5-4 per cent increase in domestic food production, and a 10–20 per cent decrease in the number of undernourished people worldwide. Improving women's secure access to land and, as a consequence, to water for productive use is however constrained by many institutional, social, and cultural factors.

This session shared experiences on efforts to remove barriers to women's access to secure land and water tenure rights, and discussed the extent to which a coordinated approach to land and water governance can have positive outcomes from a gender point of view. It addressed the following questions:

- How do women's high level of land tenure insecurity in the agricultural sector affect their access to and control over the water they need for farming? How does this affect women's agricultural performance?
- What are the barriers (economic, social, legal) to women's secure access to water (and land) for productive purposes? How to overcome these barriers?
- What are the problems/challenges associated with disjointed management of land and water resources for women's land and water tenure security?
- What are the benefits of adopting a coordinated approach to the management of land and water to strengthen women's land and water tenure security?
- What can we learn from case examples (successful examples and failures)?

Two papers were presented:

#### [Safeguarding women's land and water rights through the establishment of land monitoring and recording systems – Emerging lessons from Malawi](#)

*Author: Robert Kafakoma, TSP, Malawi*

Land and water is central to the social and economic development of Malawi where 85 percent of the 16 million population, many of whom are impoverished, rely on subsistence agriculture. Both land and water resources are becoming increasingly scarce resulting in increased levels of conflict particularly among communities. The past 20 years has witnessed increased levels of land conflicts amongst the communities and between communities and large-scale land investors. These are all linked to access to land and water. This defines the nature and extent of the challenges that face Malawi as it struggles to address the overarching problems of eradicating poverty.

In 2002 Malawi adopted a comprehensive land policy but this has not been matched with equally progressive supportive land legislation. The delays have become a recipe for increased landlessness, inter-



generational land fragmentation, insecure land and water tenure regimes, land concentration, inequalities in land and water access, land grabbing, lack of transparency, and corruption in land administration.

With support from the International Land Coalition (ILC), a local organisation in Malawi, Training Support for Partners (TSP), is implementing a project which aims to safeguard women's land rights through the establishment of land monitoring and recording systems in one of the districts in the central region of Malawi. This paper shared the emerging experiences and lessons from the project. Experiences from this project reveal a very close linkage between land and water security as they relate to food security at community level.

### [Women's empowerment and increased food security through increased access to land and water: An experience from Jharkhand, India](#)

*Author: Saswati Roy, SWADHINA, India*

The paper highlighted the issue of land and water governance based on practical, field-based experience of Swadhina – a women's organisation working for the rights of grass-root women for nearly three decades. Field experience in rural areas very effectively illustrated the need to have a people-based system in order to magnify the impact of land and water governance. The simple steps taken by Swadhina to empower women and ensure food security through increased access to land and water, actually helped the entire community experience positive development coupled with enhanced access to their rights. It is also a powerful example to demonstrate how women can actually be active decision-makers and take up meaningful roles in land and water governance.

#### **In summary**

These case studies provide good examples of the importance of land and water governance in supporting women in agriculture who can make significant improvements to both water and food security. Putting land and water in the hands of women can make a big difference. It recognises women as farmers and improves their visibility in agriculture; it improves food security as food is the primary focus for women, and hence the destination of most of the income generated by women. Women's access to secure land rights can be effectively promoted by improving women's awareness of the laws – women's legal literacy.

## **9 Conclusions and what happens next**

This final session of the workshop brought together a broad consensus on the outcome from the papers and discussions and what to do next. Questions addressed included:

- What lessons can be learned about the arguments for and modalities of coordinated land and water governance?
- What are the opportunities and challenges for operationalising a coordinated approach to land and water resources management and governance?
- What are the knowledge gaps?
- Looking to the future, what are the opportunities for collaborative partnerships in knowledge generation, in linking science and policy, in establishing the linkages needed between land and water constituencies?
- What specific recommendations are there for future action by GWP, ILC, and IWMI?

### ***What was learned***

The workshop papers and discussions eloquently demonstrated the complex, symbiotic nature of land and water resources – how surface and groundwater influence the way in which land is managed (irrigation and/or rain-fed farming, intensive agriculture/rangeland/forestry) and the way in which land is managed greatly influences both the quantity and quality of surface and groundwater in a catchment.

Discussions focused on a range of linkages:

- How farmers need access to both land and water to improve food production and increase family and national food security. Access to land alone is not enough.
- How securing rights to land can secure people's access to water resources, and particularly women's access to water; and provide the collateral for farmers to invest in on-farm water infrastructure.
- How land use planning, such as forestry and soil and water conservation in the upper part of a watershed can influence the availability and quality of water for other purposes in the lower parts of the watershed.
- How intensive farming using chemicals can cause diffuse pollution and can influence water quality and hence availability downstream.
- How reversing land degradation and improving productivity cannot be done without water.
- How the current land acquisition (land grab), particularly in Africa, is also acquiring valuable water resources even though this may not be upper most in the agreements being made over land because the link is not well understood.
- How international food trade is not just about 'virtual water' trade, In some instances it is also about 'virtual land' trade as well when food exports come from countries where land is limited rather than water.

The workshop heard that the potential benefits of coordinated land and water governance could be significant, particularly their impact on increasing food security when both land and water resources are limited and trade-offs are needed to get maximum benefits. Although a number of presentations illustrate the benefits of a coordinated approach to land and water management, more examples are needed on how cooperation across land and water sectors makes a difference. Many papers referred to institutions, both national and international, that continued to work in 'silos' and treat land and water as separate and independent resources. The level of 'integration' needed was discussed and most considered that coordination was the more apt approach. But coordination could range from land and water institutions working together as one to a less intense approach involving a simple and regular exchange of information. The level of coordination thus being would need to depend on local conditions.

This is not a new story. It is one that is well known across the world of land and water. But most organisations still continue to work in isolation with only limited coordination. The key question is – Why is this so? Several possible answers emerged from the workshop. Some people are ignorant of the need to coordinate; some are aware of the need but choose to ignore it; and some are confused about the benefits of coordination. Others in localities where land and water resources are limited are well aware of the need to coordinate but are unable to promote change because of strong institutional and personal resistance, a lack of political will for change, and uncertainty about the benefits of change. Most international development funding for land and water development focus on one resource or the other and the funds are often channelled through difference government institutions – water funding to water resources and agriculture; and land funding to environment ministries. These well-established pathways continue to reinforce the silo approach.

### ***What next***

The workshop considered that promoting better coordinated land and water governance was vitally important for the future management of these two strategic resources. But trying to ‘sell this message’ was difficult because of the complexity of land and water interactions. It is therefore important to think carefully about how this story is told, particularly to those who may not be specialists and yet influence decision-making, in order to ensure that change takes place. Several steps were suggested:

- The first and most important step was to link land and water governance to issues which are vitally important nationally and locally – like food security and environmental sustainability. If coordinated governance can increase food security without damaging local ecosystems then there is every chance that politicians will listen and develop the high level will needed for change.
- But evidence will be needed that coordination can produce measurable benefits in terms of increased productivity with no deterioration in local ecosystems. Evidence can come from well researched case studies where changes have been made and benefits of change have been measured.
- Using the evidence, different stakeholders will need simple, strong messages – politicians need policy briefs while grass roots communities need practical measures that can be implemented at local level.
- The pathway from research to policy is not a linear process and many people and organisations will need to get involved in ‘selling the message’ at all stakeholder levels to influence the changes needed.

### ***What can GWP, ILC, and IWMI do?***

Based on the evidence of the workshop GWP, ILC, and IWMI are willing partners and together offer an ideal team to catalyse change. IWMI as a research organisation is skilled at gathering evidence, and GWP and ILC are both knowledge managers with influential networks and are highly skilled at developing and disseminating the messages to influence the many different stakeholders across their networks and partners.

A long-term strategy is needed but immediate plans include:

- Provide evidence and case studies for a GWP Background Paper as the next step in promoting the case for coordinating land and water governance
- Use the publications to initiate a global debate on the need, options, and benefits of coordinating land and water governance.

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The Global Water Partnership's vision is for a water secure world. Our mission is to advance governance and management of water resources for sustainable and equitable development.