THE RESILIENT LANDSCAPES APPROACH:

FACILITATING SOCIAL LEARNING ACROSS SECTORS AND SCALES TO CREATE SHARED VALUE
WWF is one of the world’s largest and most experienced independent conservation organisations, with over 6 million supporters and a global network active in more than 100 countries.

WWF’s mission is to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature, by conserving the world’s biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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HIGHLIGHTS

• The responsibility of land and water stewardship lies not only with the individual land user, but is shared with the surrounding community in a particular landscape along with supply chain role players in each of the land use sectors operating within that landscape.

• The Resilient Landscapes Approach (RLA) offers a novel solution to building resilience in multifunctional landscapes in order to respond to the complex social-ecological issues involved in balancing the needs of both agricultural production and ecosystem sustainability. The RLA is currently being implemented and tested in a number of economically and ecologically significant catchments in South Africa.

• The RLA is built on the principles of resilience thinking, creating shared value and social learning. Adaptive governance also plays an important role in implementing the RLA.

• Through the RLA, a social learning platform for collaboration among local producers, supply chain actors and the broader community is being developed. Through this platform, these diverse stakeholders can come to a mutual understanding of the shared risks and shared value of the landscapes in which they operate, and develop shared action plans for improved stewardship.

• This paper describes the concepts which underpin the RLA, and uses examples from WWF-South Africa’s work with various partners from agricultural and financial sectors to demonstrate how resilience thinking, creating shared value and social learning can be instrumental in bringing about the desired social change to build resilient, multifunctional landscapes.

QUICK OVERVIEW

The Resilient Landscapes Approach (RLA) is a novel way of working with stakeholders in multifunctional landscapes to build resilience of ecosystems through collaborative learning and localised actions, both on the ground and throughout agricultural and forestry commodity supply chains. The RLA is being piloted in South Africa by the WWF-Mondi Wetlands Programme, which has successfully used the approach to initiate collaborations with the sugar, plantation forestry, dairy, pork and potato sectors. Multifunctional landscapes underpin not only the livelihoods of local communities but also the supply chains and markets which depend on agricultural and forestry production in them. The RLA is based on three concepts rooted in the academic literature: (1) resilience thinking, (2) creating shared value and (3) social learning. Adaptive governance is considered a cornerstone of the RLA. By bringing together multiple stakeholders across sectors and scales, through facilitated social learning processes, the RLA aims to build resilience of the ecosystems which underpin human well-being in productive multifunctional landscapes.
Traditionally, field-based conservation projects have worked at a local level, focussing land and water stewardship interventions at land-user scale. Knowledge of better practices is transmitted, from those that know better (conservationists) to those that need the new knowledge to improve their practice (land users)\(^1\). However, when dealing with complex issues such as land and water stewardship, the challenges are multifaceted and responsibility for stewardship is also shared with the broader surrounding community in a particular landscape or catchment.\(^2\) Furthermore, the responsibility extends throughout the supply chain in each of the land use sectors within that landscape, from land user to retailer, investor and consumer.\(^3\)\(^4\) Stakeholder cultures are diverse, and worldviews and opinions highly varied, and therefore co-constructing solutions is challenging. Thus the traditional conservation approach of ‘command and control’ is unsuitable in these contexts,\(^6\) and the simplistic notion of learning through knowledge transmission seldom contributes to meaningful social change.\(^7\)

This paper presents the concept of the Resilient Landscapes Approach (RLA), as it has been developed and is currently being applied by WWF-South Africa through its WWF-Mondi Wetlands Programme (WWF-MWP) as part of the Global WWF Mondi Partnership. The RLA is a novel way of working with stakeholders towards sustainable multifunctional landscapes to build resilience of ecosystems through collaborative learning and localised actions. It is proposed as a solution to the long-standing conflict between the goals of productive agricultural land use and ecosystem sustainability.\(^8\)\(^9\) Sustainable multifunctional landscapes are landscapes created and managed to integrate human production and landscape use, to maintain critical ecosystem function, service flows and biodiversity.\(^10\)\(^11\)\(^12\) These landscapes underpin not only the livelihoods of local communities but also the supply chains and markets which depend on production in them.\(^3\) The RLA therefore advocates working with key actors throughout agricultural and forestry commodity supply chains. The RLA brings together three concepts rooted in the academic literature: resilience thinking, creating shared value and social learning. This paper aims to demonstrate how, using these concepts to guide the work of the RLA, WWF-South Africa is facilitating action on the ground which is leading towards innovative shifts in how land and water stewardship takes place.

WWF-South Africa’s experiences of engaging corporate sector supply chain role players with local producers have revealed the importance of linking these stakeholders in the landscape.\(^11\)\(^12\) This connectedness allows them to better understand that their environmental stewardship responsibilities go well beyond financial transactions. Through understanding these responsibilities, stakeholders further up the supply chain can exert influences along the supply chain to ultimately influence how the producers manage the landscape.\(^5\) For example, WWF has demonstrated that by connecting local sugarcane farmers in the Noodsberg mill supply area of South Africa and international sugar buyers such as Coca Cola and SAB Miller through a collaborative multistakeholder platform, these otherwise disparate actors have come to better appreciate that they share both the risks and the benefits from the local landscape.\(^13\) The buyers recognise the business risk of buying sugar that is not grown using improved environmental, social and agronomic sustainability practices. The sugar cane growers have in turn recognised the need to implement sustainability practices in order to retain the buyers.\(^13\) WWF is facilitating multi-stakeholder social learning processes between sugarcane sector supply chain
role players and local producers, in order to a) generate a shared understanding of environmental stewardship, and b) reduce shared risks and enhance shared value from these landscapes, which is achieved through collaborative governance and actions.13, 14

After 24 years of field-based work in South Africa, first catalysing wetland conservation and then strengthening wetland management practices, the WWF-MWP has developed and is now testing the RLA, in an effort to build on its previous practice and experiences of working with landowners and agriculture supply chain role players.

Historically the WWF-MWP has worked mainly with the plantation forestry and sugar industries, strengthening agronomic and environmental practices for improved water and land stewardship.14, 15 A key asset of the programme’s staff is their transdisciplinary understanding of wetland ecology as well as environmental learning processes and social change. Taking the WWF-MWP’s work with the sugar industry as an example14 it has focused at both an industry governing body (e.g. South African Sugar Association) and local land user level. Corporate manufacturers (e.g. Illovo Sugar South Africa, SAB Miller and Coca-Cola) were engaged in an attempt to strengthen supply chain environmental sustainability.14 Consumer oriented work, which strengthens links from the producer, through the market, to the consumer, has also taken place through developing locally-suitable farm management systems and guidelines (e.g. SUSFARMS© for sugarcane growers16) in an effort to achieve industry certification standards (e.g. Bonsucro, the global sugar standard17). Other WWF conservation projects in South Africa have experience of working with retailers (e.g. Woolworths and Pick ‘n Pay) as well as with non-traditional supply chain actors such as the insurance, banking and investment companies (e.g. Nedbank and Santam Insurance) to reduce environmental impacts and risk.11, 18, 19

However, despite the WWF-MWP’s previous successes of working with the sugar and plantation forestry sectors, a key gap remaining was that of addressing the links between the individual sectors already engaged with separately. Additionally there was a need to draw in new sectors such as the dairy, pork and potato industries, which had not been engaged with previously. The RLA was therefore developed in order to focus the WWF-MWP’s work in specific economically and ecologically important landscapes, and in an effort to effectively support social change for improved land and water management practices, in the uMgeni and uMvoti River systems. The RLA concept builds on the strengths of WWF-MWP’s ecological and social skills and experiences, adopting a new business orientated concept called ‘shared value’. It attempts to cross mental, cultural and physical boundaries by encouraging greater collaboration on water and land stewardship between the different agriculture sectors and supply chain actors represented within these landscapes, as well as between individual farmers.
THREE KEY CONCEPTS WHICH UNDERPIN THE RESILIENT LANDSCAPES APPROACH

The RLA draws on three theoretical concepts: resilience thinking, creating shared value, and social learning. Furthermore, adaptive governance is an important foundation of the RLA.

a) Resilience thinking

Recognising the linkages between social and ecological systems is one of the cornerstones of resilience thinking. A social-ecological system (SES) is an integrated system of ecosystems and human society with reciprocal feedback and interdependence. Current times, in which humans have transformed the functioning of earth systems, are characterized by uncertainty and on-going change. At a global level these include, for example, climate change or abrupt, unexpected changes in the world economy. At a local level in South Africa for example, dairy farmers need to increase milk production due to increased demand, despite reduced water availability in the catchment due to local industrial and urban expansion. Increasing the resilience of landscapes means they are robust to disturbances and can recover from unanticipated shocks, through multiple feedback loops. Such landscapes can be characterised as follows:

- They continue to function and provide multiple ecosystem services and numerous socio-economic benefits.
- They are adaptive and can recover from shocks such as floods and droughts.

Such landscapes can be termed multifunctional landscapes.

The term resilience needs to be used circumspectly, as resilience is not always a good thing. We suggest that, in the context of the R.A: Resilience IS about building capacity and buffers in social-ecological systems. It is a way of thinking and working, and is a lens through which social-ecological systems can be understood. Resilience IS NOT always the end goal, or about not changing. Nor is it an ideology, a new ‘buzz word’, or ‘the new sustainability’. Bringing about more resilient agricultural practices requires developing agricultural systems that are persistent, adaptive, and transformative: the challenge lies in the ability to determine when persistence, adaptation, or transformation is suitable or necessary and to what degree. Bringing about such change requires effective platforms for dialogue and deliberation about the trade-offs required.
The following principles can be used to enhance and build resilience in ecosystems:

- **Diversity**: Maintain or build biodiversity, functional diversity and social diversity along with promoting response diversity.

- **Connectivity**: Maintain or build ecological connectivity such as corridors, and increase levels of connectedness within and between human communities.

- **Reserves**: Increase the ‘safe operating space’ of systems and keep them far from thresholds or tipping points by building reserves of various forms of natural and social capital to increase adaptive capacity.

- **Polycentric governance**: Promote polycentric governance, i.e. governance across different scales, from local to global.

- **Social cohesion and broad participation**: Broaden knowledge co-construction by engaging multiple perspectives and knowledge systems and working with a broad stakeholder base.

- **Shared mental models and building a common understanding**: Develop a shared understanding of the SES in question, including its diverse components, linkages, dynamics, threats and risks.

Maintaining and enhancing ecosystem resilience in SESs requires carefully structured social processes to bring about shifts towards improved environmental stewardship and the creation of shared value. These shifts are explored in the following two sections, which include some selected cases which specifically relate back to resilience.

Cross-sector dialogues: Participants from the retail, farming, NGO and government sectors coming together to share lessons and insights on Water Stewardship in a facilitated social learning workshop.
b) Creating shared value

Creating Shared Value (CSV) is a business concept developed by Porter and Kramer and defined as “policies and operating practises that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress”. CSV is therefore at the intersection of creating business value and creating social and ecological value. Shared value is not about ‘sharing’ the value already created by corporates such as by redistribution; but rather about expanding the total pool of economic and social value. Shared value moves companies away from the ‘trade-offs’ paradigm to more of a ‘win-win’ paradigm in which both business and society benefit.

The implication of CSV when applied to the natural environment is that the additional cost to a company of minimising their impacts on the health of the environment will pay for itself through long term profits to the company. But what if shared interests alone are insufficient for building the sustainability of the multifunctional landscape? Beschorner criticises CSV, calling it a ‘one-trick-pony’, implying that there may be too much reliance on CSV to solve all the social and environmental problems relevant to the business. It is important to stay focussed on shared interests or win-wins, but it may be necessary to also retain a strong trade-off approach where required. Orr and Sarni also highlight the limitations of applying CSV too narrowly, and recommend that CSV theory needs to be supported with evidence from other science and policy domains to better-reflect business water risk. They further suggest that without articulating how society benefits from better water management and what the role of companies is within that, CSV may remain solidly embedded in notions of resource efficiency and savings, often with poor water resource stewardship outcomes.

In times where the market and consumers want to support brands that are environmentally and socially responsible, sustainable supply chain management is crucial, and all role players along the supply chain are expected to take responsibility for environmental stewardship. This is considered by some as a ‘social licence to operate’. WWF-South Africa’s understanding of sustainable supply chains is shown in Figure 1, and demonstrates the need to take a systems approach to building sustainable, shared value. Through CSV, corporates can more meaningfully support the development of greater value to those role players further down the supply chain to the producers on the ground, and can thereby contribute to increasing the resilience of ecosystems, and the multifunctional landscape as a whole.
A practical demonstration of CSV in South Africa is the contribution of the internationally used Forestry Stewardship Council’s chain of custody certification system to improved wetland and catchment management. Exotic plantation trees have ready access to water when planted in wetlands, and therefore this practice was identified as having an especially high impact on stream flows. This is of particular significance, socially and ecologically, given that South Africa is a water-scarce country. In response to both the requirements of national legislation and the need to maintain their ‘social licence to operate’, The WWF-MWP played a key role supporting the forestry industry in South Africa to withdraw extensive areas of tree plantations from wetlands and riparian areas and their associate buffer zones (see example below in ‘c) Social learning’). For example, from 2003 to 2014, Mondi Forests withdrew approximately 8,200 ha of plantations from wetland areas and their associated buffers (J. Shuttleworth, Mondi Environmental Specialist, 2014). Other large forestry companies, such as SAPPI, have done the same. While this represents a considerable financial loss for the companies in terms of forgone production, it represents a considerable investment in critical ecosystem services, improved resilience of catchments, especially during dry periods, and in reducing risks to corporate performance. Specifically, it allows access to be secured to the considerable global market which demands Forest Stewardship Council certification.

The RLA seeks to strengthen the resilience not only of the local landscape and the catchments, but also the entire supply chain by working with key actors in the supply chain to better understand the linkages and associated risks posed by one section of the supply chain to another. Through the concept of environmental risk, the significance of creating shared value in multifunctional landscapes can

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**Figure 1:** WWF-South Africa’s view of sustainable supply chains, demonstrating connectedness all the way from the land user to the insurer, and the embedded nature of enterprises within the economy and ultimately within ecosystems.
be demonstrated. For example, the risk that poor land management practices of farmers pose to the banking, insurance and financing or to those retailers wanting to improve their corporate sustainability and brand reputation. In another example, WWF-South Africa worked together with South Africa’s largest short term insurance company Santam, to identify how they could better manage increased climate change risks to the company. They discovered that “human-induced changes to the landscape can have an equal or greater effect on company risk exposure than climate change”. They therefore collaborate with land users to rehabilitate degraded ecological systems and restore their buffering capacity, reducing anthropogenic-induced flood and fire damage to the land users and the number of insurance claims.21

c) Social learning

It is widely recognized that there is a large gap between the sustainability that many in society are calling for, and what actually happens in practice. We cannot assume that social change will automatically emerge from interventions. It is important to understand what social change is, its dynamics, and the role social learning can play in supporting the change society requires to move towards sustainability.22 The literature in the field of social learning is vast.23-24 What becomes strikingly apparent in the many interpretations of social learning in natural resource management research and practice, is that due consideration and understanding is often not given to the ‘social’ or ‘learning’ aspects of social learning and how this is related to social change.24-25 As a result, there is a danger that social learning can be objectified and used as a tool to achieve certain outcomes, rather than seeing it as a learning process where the outcomes are not predetermined.25 Wals describes a way around the confusion of numerous descriptions of social learning: “it is safe to say that social learning tends to refer to learning that takes place when divergent interests, norms, values and constructions of reality meet in an environment that is conducive to meaningful inter-action”.26 Wals focuses on how people actively and collectively learn, by bringing together people from different backgrounds in a ‘safe space’, to share knowledge and experience and develop new knowledge, ways of thinking and possibilities.26 Conflict and contradiction are seen as important triggers of learning.27-28 Landscapes are inherently complex social contexts in which conflict is likely to occur and social learning thus offers a tool for working positively with such conflict and improving collective action.28

Through using expansive social learning theory and processes, the WWF-MWP was able to support staff and managers of Mondi South Africa, an international packaging and paper Group, to strengthen organisational learning, development and institutional change.25 Through a two year action learning research process, staff were supported to question past and current organisational practices in an effort to more deeply understand what factors inhibited improved wetland management, and its integration into plantation forestry operations. Staff then developed and implemented solutions to overcome the deeper underlying contradictions that were inhibiting improved practice. Their efforts resulted in the personal and organisational changes required for improved wetland practice. Five types of changes emerged from the research that notably ranged on a visibility scale from being quite explicit on the one hand, to being more tacit on the other: 1. changes in organisational structure: e.g. the development of an environmental training system and a new staff induction system; 2. changes in practice: e.g. new burning,
grazing and wetland rehabilitation practices; 3. changes in approach: e.g. of how staff began to work with each other on wetland management across the different professional disciplinary boundaries; 4. changes in discourse; e.g. in conversations of what meaningful learning processes were, and which processes were important for scaffolding a change in wetland and broader environmental practices; and 5. changes in technical wetland knowledge, values, and thinking on how to deal with wetland management issues.

Social learning was also a critical component of implementing the withdrawal of timber plantations from wetlands and riparian areas and their associate buffer zones (described in the previous section). A key stumbling block to implementation was a lack of an agreed-upon and a scientifically defensible method for delineating the boundary of a wetland. Here WWF-MWP played a critical role, by facilitating a series of social learning workshops and field days over a 5-year period, to bring together the various stakeholders, including forestry companies, government departments and scientists, to co-develop a method that was agreed upon and supported by everyone.

The following is a selection of key elements of social learning that is helpful to develop a broad understanding of the type of social learning relevant to the RLA work, and highlights ‘HOW’ the WWF-MWP works with stakeholders to bring about social change:

- **The importance of valuing the learning process**: Wals and van der Leij emphasize that the crux of social learning is not what people need to know, but rather how people learn and what they want to learn, and how they will be able to challenge and transcend societal norms for a more sustainable future.
• **Changing values, beliefs, ideologies and assumptions:** It is only through participative learning about new information that we can test our own values and concerns, and re-orientate our values and actions.42

• **Disagreements are seen as preconditions for learning and innovation:** The conflicts that emerge from discussing divergent views are seen as a prerequisite for learning, and if used in a positive way, can prevent complacency and encourage innovative thinking.43 However, a suitable and safe learning space which is free from ridicule and scorn is needed. Such facilitated safe spaces and dialogues can lead to emergent awareness and collaborative deconstruction of one’s understanding and that of others, and the co-construction of new knowledge, which are critical steps in transformative social learning.46

• **Reflexivity:** Reflexivity is important to help people move away from seeing learning as being about expert-derived predetermined solutions and the right way of doing things, towards a process where learning can help develop new knowledge, values and an individual or group’s ability to participate more fully and effectively in making their own choices and taking responsibility for developing solutions to complex, changing problems.22

**d) The importance of adaptive governance**

Governance refers to the structures (including rules and regulations) and processes (including negotiation, mediation, conflict resolution, elections, consultations, etc.) by which societies share power and manage their affairs.50 Adaptive governance is recognised as playing an important role in the resilience of ecosystems and the services they provide,50 and is a cornerstone of the RLA. A key aspect of the RLA is that the benefits provided by a landscape or SES are shared fairly amongst current users and between the current generation and future generations. In addition, the RLA seeks a just distribution of involuntary risks which arise from use. Users will often vary greatly in terms of technologies, interests, and levels of power, and inevitably there will be users who place their self-interests before the shared interests in the landscape. Thus rules are required to govern the use of resources in order to protect the rights of the different users, particularly those who are most vulnerable.

Given the key contribution of governance to a SES, an adaptive governance approach is therefore required if the SES is to be resilient, and this is increasingly being recognised in the South African context, where governance deficiencies are recognised as a key risk to sustainability of ecosystems and the resources they produce,50,51 despite forward-thinking environmental legislation, for example the Water Act.52 Governance capacity and adaptive capacity are both important requirements for effective adaptive management of SESs.53–54 For this reason the WWF-MWP is currently strengthening the capacity of both local government authorities and farmer-led irrigation boards.
The diagram presented in Figure 2 illustrates the four key processes that contribute to how the WWF-MWP is implementing the RLA (green boxes):

1. **Understanding the resilience of the SES** by mapping and developing contextual profiles of the various components. Linkages are identified between these components, developing an understanding of the drivers of unexpected change and potential leverage points.55

2. **Strengthening governance institutions and processes** through co-development of an appropriate collaborative governance framework and social learning processes for catchment stewardship. Furthermore, providing capacity building opportunities for officials working in local, district and provincial government bodies will aid in supporting formal governance processes.

3. **Engaging stakeholders within and across sectors, as well as up and down supply chains and across scales (local to global) through facilitating social learning.** SES and ecosystem degradation data is mirrored back to stakeholders.56 In this way, their understanding of the SES and the drivers of risk can be deepened, potentially creating dissonance and opportunities for transformative learning. Through this process, opportunities for creating shared value can be realized.

4. **Taking practical action to strengthen producers’ sustainability practices,** for example by co-developing and implementing shared value creation strategies and action plans with producers, supply chain partners and relevant local governance bodies. This includes pilot projects for providing support to local land users or producers for the implementation of Better Management Practices (BMPs).

The importance of good soil management: Learning about soil health and the link to productivity and water usage on a dairy farm on the New Generations Plantation study tour in KwaZulu-Natal, South Africa.
These four modes of action are all linked, and are used in various ways to support cross and within sector collaboration in the landscapes (blue arrows). The various land use sectors (e.g. sugar, plantation forestry, dairy, pork and potatoes) are illustrated using blue columns. This diagram provides broad actions that are guiding implementation of the RLA, but it may require adjustment as the work progresses and new ways of working emerge. In particular, as engagement with stakeholders progresses, it will likely result in adjustments to the way in which the RLA is implemented to reflect the priorities, perceptions and values of stakeholders.

As an example of how the WWF-MWP is beginning to encourage collaboration across sectors, it has facilitated cross-sectoral learning orientated field days, focused on improving freshwater ecosystem management practices. Different production sectors are able to share with each other their improved practices and deliberate the management challenges which they continue to face, in an effort to co-construct new innovative solutions. For example, leading sugarcane farmers share examples of their best practices and the difficulties they face in implementing such practices, with plantation foresters and dairy farmers. Water security dialogue workshops have been held at industry level, between the sugar, plantation forestry, dairy, pork and potato, sectors. These workshops encourage open dialogue between the industries on what water security and freshwater ecosystems means to each of them, encouraging the development of a shared understanding of the values and risks across the landscape.
CONCLUSION

In this paper the concepts of resilience thinking, creating shared value and social learning have been explored with practical examples, and the complementarity between them demonstrated. The mechanism by which these concepts integrate to form the conceptual framework for the Resilient Landscapes Approach was explained. By using concepts with a sound academic, theoretical foundation, together with recognised tools from social learning, the WWF-MWP is working to bring about environmental and social change in its focus catchments with local land users and associated supply chain stakeholders, as well as local authorities, through strengthened governance capacity and understanding of the risks and benefits of these landscapes. This approach is also being shared and tested with other WWF offices around the world (initially in South America and Eastern Europe), through the WWF-Mondi Global Partnership and in partnership with the New Generation Plantations platform.57-58 In this way lessons learned from practical implementation of the RLA in South Africa are being shared globally.
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WWF’s work in the uMgeni River Catchment

1991

The year that the very successful WWF Mondi Wetlands Programme was established.

5MIL

Number of people that reside within the Greater uMgeni River Catchment in KwaZulu Natal, South Africa.

6

Number of sub-catchments where WWF and its partners are piloting and testing the Resilient Landscape Approach and strengthening water stewardship.

495mm

South Africa’s average rainfall per annum.

20%

Total estimated gross national product of the country generated within the Greater uMgeni River Catchment.

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To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

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