

Seminar: Political drivers for sustainable ecosystems



ABSTRACT VOLUME

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A multinational commitment to save the world's largest tropical wetland



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Keywords

wetlands, governance, transboundary, conservation, sustainable development

Highlights

The Pantanal is key for biodiversity, with South America's highest concentration of fauna.

It is key for development: Pantanal states contribute more than \$70 billion to their national economies.

The Pantanal Challenge offers an innovative model for cooperative transboundary water management to achieve policy priorities, including Sustainable Development Goals

Introduction and objectives

The Pantanal Challenge is the first transboundary initiative to sustainably develop and conserve the world's largest wetland, shared between Paraguay, Bolivia, and Brazil. The Pantanal is one of the most biodiverse places on the planet and a major contributor to the economies of the three countries. Yet, this region confronts significant development pressures which threaten to destabilize this unique ecosystem. Building on dialogues between national governments, civil society, and the Pantanal community, Brazil, Paraguay, and Bolivia will come together at the 2018 World Water Forum to announce a path to jointly sustainably develop and conserve the Pantanal.

Methodology approach

With no transboundary framework for the world's largest freshwater wetland currently in place, the Pantanal Challenge will fill a major gap in understanding how to manage a freshwater ecosystem for economic growth and biodiversity conservation. This project entails a partnership between high-level government officials with support from WWF. By engaging in ongoing trilateral dialogue, each country will understand how their land uses and policies affect one another and how the collective environmental challenges, specifically climate change, will impact them all. The three countries are committing to design a sustainable, prosperous future for the Pantanal ecosystem and inhabitants.

Analysis and results

Lack of integrated management of the Pantanal has led to the overexploitation of the Pantanal's resources and unsustainable infrastructure development. The Pantanal Challenge exemplifies a novel approach to transboundary ecosystem management, working across a series of government levels to create a framework for the Pantanal that reflects the socioeconomic concerns of various parties and the needs of biodiversity. With the intended declaration of trilateral cooperation for the sustainable development and conservation of the Pantanal planned for the World Water Forum in Brasilia in 2018, Brazil, Paraguay, and Bolivia are setting a precedent for similar efforts aimed at managing major transboundary ecosystems. Successful steps taken thus far include stakeholder engagement and dialogue across local, state and national levels; identification of key ecosystem services and the threats to those services; and strategic actions for improving the Pantanal's health. This trilateral initiative builds upon collaborative, intergovernmental work that is already happening within the five countries that compose the Rio de la Plata Basin in which the Pantanal sits.

Conclusions and recommendation

This project demonstrates forward thinking and proactivity in addressing the insecurity and vulnerability associated with climate change projections for the Rio de la Plata Basin. The flood control benefits of this project extend beyond the Pantanal to include millions of people downstream in Uruguay and Argentina. As the three countries advance the Pantanal Challenge, it will be a model for how to leverage national economic concerns and goals as means to achieve development and conservation goals for a globally important ecosystem.

Cooperation and conflict: A subnational analysis of regions under threat



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Keywords

Water scarcity, violent conflict, cooperation, pollution, large-N

Highlights

The research shows linkages between water scarcity to both conflict and cooperation. Employing a subnational approach provides a more fine-grained perspective. With data on precipitation, groundwater depth, water pollution, the work offers a comprehensive analysis of several factors that are crucial when understanding the links between water and security.

Introduction and objectives

Extreme water shortages have been frequently associated with violent uprising. Yet, some areas witness more cooperative actions when facing droughts or other water deficiencies. This begs the question why some places experiencing water scarcity are more likely to see cooperation around water while others do not. Studying this question, quantitative research (in contrast to case studies) has almost exclusively focused on state- or basin-level comparisons, largely disregarding subnational levels of analyses. This research moves away from country aggregates by using disaggregated data: the work empirically analyzes the association of water scarcity on cooperative events as well as violent conflicts.

Methodology approach

This study captures subnational variation by using geo-referenced event data on water related cooperation as well as violent communal conflict incidences. Using 55 by 55 km grid cells allows for a much more nuanced analysis of available water resources, which also takes into account factors such as agriculture, economic development, ethnic discrimination or prior exposure to violence. With different regression model specifications, the full panel analysis covers Africa, and the Middle East for 1990 to 2016. Some data in this study however require cross-sectional approaches.

Analysis and results

The findings show that the association between water shortages and conflict (or cooperation) are conditional on government type, infrastructure, and economic conditions. In addition, the findings not only suggest that analysis on water scarcity and conflict ought to include measures beyond rainfall data, it also shows that groundwater is an important predictor for conflict when holding other factors constant. Lacking both access to groundwater or experiencing unusually low rainfall is associated with an increased risk of violent communal conflict. Further, groundwater access can be a key adaption tool for areas with less precipitation. What is less clear is how state institutions can mitigate structural issues pertaining to scarcities which makes cooperation on water resources more likely. More results on what explains cooperation and how water pollution affects these findings will be presented during the seminar.

Conclusions and recommendation

Governments are positioned to alleviate water shortages by implementing environmental policies that involve intervention, resource conservation, or redistribution. Such policies are expected to be more effectively utilized in well-administered areas. Yet, this also underlines the importance of non-governmental actors which can significantly support policy efforts. This research identifies not only broader regions that are of higher security concerns; moreover, the work highlights where actions are required within a country. Problems with water allocation are not ubiquitous and demand actions depending on the context. This research enables us to differentiate between different sources of conflict, thereby unpacking some of these complexities.

Linking water ecosystem services and migration in inner Niger delta



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Keywords

wetlands, drought, household, ecosystem services

Highlights

- This study highlights the link between water ecosystem services and migration in Inner Niger Delta ;
- It shows that water ecosystem services are the main livelihoods of the people. Water ecosystem services' decreasing is increasing people migration;
- The migration could be limited through restoration and conservation of ecosystems and biodiversity.

Introduction and objectives

The Inner Niger Delta (IND) is highly productive and biologically diverse ecosystems, fed by seasonal floods. It plays a crucial role in shaping culture and driving local and national economies. Over one million of people composed mainly of fishermen, farmers and breeders depend on the vitality of these wetlands. Despite of the resources that contained the IND, people continue to migrate towards other countries. The main objective of this study is to analyze the link between water ecosystem services and migration in IND. Specific objectives are to value economic ecosystem service for the households and analyze the determinants of migration.

Methodology approach

This study is based on 1200 households' random survey from 60 villages in IND. The survey was conducted during October to December 2017 in Mopti and Segou regions in Mali. The collected data concerned household socio-demographic characteristics, number of migrants in the households, type and value of water ecosystem services, security issues, willingness to migrate, etc. Descriptive statistics and statistic tests were used for data treatment. The determinants of households' willingness were analyzed using logistic regression model.

Analysis and results

In IND, the households are composed between 07 and 12 member with 10 members as average. Water ecosystem services are their main sources of food, energy, transport and income. Irrigated and submersion agriculture, fisheries and livestock are the primaries activities of 62%, 21%, 17% respectively of households. For the households, climate change and infrastructure construction (ex: dams construction, irrigated agriculture areas expansion) are sources of the degradation of water ecosystem services. Migration touched 62% of survey households in the villages and 69% of household chiefs/household member willingness to migrate. The determinants of households' members' willingness to migrate are food insecurity, lack of fish in the river, lack of fodder for animal, climate change, insecurity, age, education, income and culture.

Conclusions and recommendation

Water ecosystems provide important services to people of Inner Niger Delta but they continue migration in the other countries. The migration's factors are food insecurity, lack of fish in the river, lack of fodder for animal, climate change, insecurity, age, education, income and culture. To limit migration, it is necessary to restore and conserve water ecosystem by innovations in climate adaptation, integrated water resource management and people sensitization.

Protracted conflict and the targeting of water infrastructure



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Keywords

Water, Sanitation, Infrastructure, War, Ecosystems

Highlights

Protracted conflict is a common feature of war in the Middle East. Here, we examine the impact of repeated cycles of targeting and reconstruction of water and sanitation infrastructures in Palestine, Lebanon, and Iraq, as the destruction of water infrastructure affects human development, economic livelihoods, and ecosystem health.

Introduction and objectives

The targeting of critical environmental infrastructures (i.e., water, energy, and sanitation) by local and external forces is a common feature of new Middle Eastern wars. We examine the impact of repeated cycles of targeting of water and sanitation infrastructures in Palestine, Lebanon, and Iraq. Our analysis of protracted conflict draws upon an original database compiled by the authors and interviews with NGOs, humanitarian actors, and government officials. The repeated destruction and reconstruction of water and sanitation infrastructure, particularly when combined with sanctions regimes and urban sieges, exacerbates civilians' vulnerability, inhibits investment in basic services, disrupts livelihoods, and affects ecosystem health.

Methodology approach

Our analysis of protracted conflict draws upon an original database compiled by the authors and interviews with NGOs, humanitarian actors, and government officials. Our coding focuses on: (1) type of environmental infrastructure; (2) location and date; (3) actor involved in targeting of infrastructure; (4) intentionality of the actor where known; (5) extent and duration of damage; (6) civilian casualties and other health impacts; and (7) type of ecosystem damage.

Analysis and results

Our research illustrates the failures of international humanitarian law and environmental law (including water law) to deal with protracted conflict. We find that the repeated destruction of water and sanitation infrastructure, particularly when combined with sanctions regimes and urban sieges, exacerbates the vulnerability of civilians, inhibits investment in basic services, disrupts livelihoods, and affects ecosystem health.

Conclusions and recommendation

Our conclusions and recommendations focus on better documentation of what happens to water infrastructure during war and mechanisms for better accountability to ensure implementation of international humanitarian law and environmental (particularly, water) law in protracted conflicts.

Regional master plan for sustainable development in the Jordan Valley



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Keywords

Jordan Valley, Master Plan, National Security, Development, Water

Highlights

- Since launching the Master Plan for Sustainable Development in the Jordan Valley, EcoPeace has been working with the Jordanian, Palestinian and Israeli governments to achieve agreement on a selected list of interventions.
- The plan's objective is to promote peace, prosperity and security in the Jordan Valley and the broader region.

Introduction and objectives

Political conflict has contributed heavily towards the Jordan River's current dire state. The issue is further complicated by the river's strategic importance as an international border. Rehabilitation is being hindered by the failure of the Israeli, Palestinian and Jordanian governments to agree on other core political issues. Reaching an agreement on rehabilitation of the Jordan River could therefore be viewed as a catalyst for regional integration and security. The Master Plan comprehensively identifies feasible, realistic interventions that could rehabilitate the Jordan River, while providing economic prosperity, greater national security, and progress towards political peacemaking in the region

Methodology approach

The waters of the Jordan River were first diverted by Israel, Syria and Jordan in the 1950s, leaving less than 5% of its historic flow of 1.3 billion cubic meters in the river today. The opportunity to launch a regional integrated development approach, led by water security issues, is in fact further strengthened when one considers the broader political instability in the region. The Master Plan delivers a projection of population and economic figures for the years 2025 and 2050 and related land and water requirements, while identifying major challenges to be addressed.

Analysis and results

Development of the Jordan River can be seen as a gateway to peacebuilding and economic prosperity within Jordan, Palestine and Israel, who all currently share polluted crossborder streams. With ISIS identified by Jordan as a real threat to national security, Jordan's environmental and economic crises can render the country more vulnerable. It is thus of regional interest to cooperate with Jordan in order to increase its resilience, particularly along the border region in the Jordan Valley, where a restored and rehabilitated river is crucial for the future of half a million people.

The Master Plan comprehensively outlines a pathway to reaching an achievable and equitable agreement on the allocation of resources and management of the Jordan River. It presents additional opportunities to not only build trust with Palestinians, but to integrate Israeli leadership in the water sector to help stabilize the situation at a regional scale. This would be at a low political cost to Israel, but with high political gain to both sides. Given the implications of transboundary water and sanitation issues for health, livelihoods and security

in the region, the three governments have clear vested interests in working together to reach new arrangements for the Jordan River.

Conclusions and recommendation

EcoPeace aims to get the three governments of Israel, Jordan and the Palestinian Authority to sign off on a Memorandum of Understanding on the Creation of the Jordan Valley Trust Fund. This will give effect to thirteen critical interventions from the 127 interventions identified in the Master Plan that adapt to changing conditions. The projects would be supported by the creation of an international trust fund under the management of the World Bank, and the appointment from each government of a representative to a Jordan Valley Trust Fund Steering Committee.

Supporting participatory resource management to stabilize the situation in host communities (PRM)



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Keywords

Water supply and availability, water security, sustainable water resource management, inclusive and participatory multi-stakeholder dialogues, conflict prevention

Highlights

- Establishment of multi-stakeholder dialogues to strengthen public participation in water management, ensure a fair water distribution and prevent water-related conflicts;
- Capacity development trainings for water utilities to improve water supply and minimize water losses;
- Water network rehabilitation to improve water availability as well as installation of barrier-free access points to water facilities

Introduction and objectives

Water scarcity, deficits in the water infrastructure and rising water demands due to a large influx of Syrian refugees, lead to insufficient water availability in host communities in northern Jordan which fuel conflicts over scant resources.

Therefore, the GIZ project establishes participatory and inclusive exchange platforms to enhance the participation of local community members in water resource management and concurrently strengthens the service capacities of water utilities as well as rehabilitates the water infrastructure to improve water availability.

By ensuring just access to safe drinking water, increasing water-use efficiency and promoting participatory water resource management, the project contributes to achieving SDG 6.

Methodology approach

The project follows a multi-level approach and combines interventions at micro level to enhance participatory development with measures at meso level to improve the communal water supply and storage infrastructure. Moreover, various ways and options regarding the sustainability of the participatory approach are explored and discussed.

Overall, the applied approach of the project seems to be highly effective in improving water availability and enables stakeholders, especially political decision makers, to recognize the benefits of participatory approaches in water resource management.

Analysis and results

The project is improving the water availability in six host communities in the northern part of Jordan by implementing interventions on different levels.

At the micro level, exchange platforms are established where local community members (including Syrian refugees) and water providers jointly discuss water-related issues to ensure that local water supply is closely oriented towards the needs of the population, especially vulnerable groups.

At the meso level, the service and administrative capacities of water utilities are strengthened through training measures to improve the water supply to local communities and to minimize water losses. Finally, the project aims to improve the water availability for almost 40,000 persons (of which 5,000 are Syrian refugees) by rehabilitating water networks, providing 3,000 modern rooftop water tanks and 2,800 water saving devices to vulnerable households. Additionally, barrier-free entrances in 160 households and 36 public institutions are installed to ensure water access for everyone. Through the implemented measures, the annual water saving in the six host communities reached almost 335,000 m³ which is enough to secure the daily water needs for additional 9,500 persons.

Conclusions and recommendation

The project fosters a constructive dialogue on sustainable water management, thereby improving the exchange between water providers and water users and alleviating water-related conflicts. Overall, the project contributes to increased water security and improved living conditions of both the Jordanian population and Syrian refugees as well as promotes social cohesion and sustainable development.

Based on the project's success and to capture best practices and lessons learnt with the multi-stakeholder dialogues, it is foreseen to anchor a participatory resource management concept at the responsible water provider.

Towards cooperative transboundary environmental management in SADC: Politics and harmonisation



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Keywords

Cooperative Transboundary Environmental Management, Southern African Development Community, Transboundary Environmental Impact Assessments, Harmonisation, Benefit Sharing, Regional Integration

Highlights

- Institutional and governance frameworks of RBOs in SADC provide a basis for advancing cooperative environmental management
- Water security interests incentivise RBOs to strengthen cooperative management
- Transboundary Environmental Impact Assessments enable transboundary environmental management to move beyond politics and into practice
- Effective transboundary environmental management advances the SDG debate

Introduction and objectives

Water is central to ecosystem-based management. The transboundary nature and biophysical interconnectedness of hydrologic, ecological and environmental processes necessitate increasingly integrated approaches to environmental management. This demands greater cooperation to reduce risks and maximise benefits shared between nations - particularly political economy benefits from progressing the SDG 6 debate - freshwater ecosystems are essential to human health, environmental sustainability and economic prosperity. Traditional resource and environmental management institutions in SADC promote siloed approaches. Thus, the objective is to identify innovative systems for enabling cooperative Transboundary Environmental Management (TEM) in SADC – a region facing security implications of escalating resource use.

Methodology approach

Desktop reviews and semi-structured key-informant interviews, coupled with comparative analysis underpins the research. A comprehensive literature review, inclusive of international best practice in TEM and pertinent policies and institutional mandates provides the data and basis for interviewing regional resource management institutions including River Basin Organisations (RBOs), NGOs and research institutions, Transfrontier Conservation Areas (TFCAs) and the SADC Natural Resources Directorate.

Collated data is analysed using a structured content analysis. Comparative assessment of regional water and environmental management principles facilitates the exploration of harmonised approaches between sectors. This is key to identifying cooperative solutions for effective TEM.

Analysis and results

Several mechanisms for TEM identified in SADC are RBOs and their enabling policies/strategies, TFCAs, policy and law harmonisation efforts, and Transboundary Environmental Impact Assessments (TEIAs). A strengths, weaknesses, opportunities and threats analysis conducted for each identified enabling mechanism highlights a strong entry point for cooperative transboundary environmental management in the form of TEIAs; the

political economy realities, and institutional mandates, in the region, constrain the effectiveness of the other identified mechanisms in the short to medium term.

RBO-established institutional and governance frameworks, e.g. the Zambezi Watercourse Commission (ZAMCOM) procedures for notification of planned measures, provide a basis for advancing cooperative management. These require member states to consider the impact of planned developments on other countries, in order to uphold the ZAMCOM-entrenched principle of avoiding significant harm. The policy and law harmonisation processes currently under way in the region, which is largely RBO-driven, demonstrate an appetite for strengthened cooperative management. However, it is evident that principles and instruments between sectors and countries must be better aligned for cooperative management to move beyond political agreements into practice. Doing so is critical to advancing SDG 6 and responding to the security risks of escalating resource use.

Conclusions and recommendation

Transboundary environmental management would benefit from the institutionalisation of emerging environmental and water management principles. As relatively advanced institutions, RBOs are well positioned to fulfil this role. TEIA processes provide a strategic entry point to shift TEM beyond the political sphere and into the technical domain. Expanding TEIA principles and guidelines to include considerations of environmental impacts beyond basin and country borders would further advance these aims. Based on research results, it is recommended that SADC develop a set of high-level TEIA principles to frame the development of progressive and standardised TEIA guidelines by RBOs in the region.