

Make Your Publications Visible.

A Service of



Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics

Attemene, Pauline; Eguavoen, Irit

Working Paper

Coastal ecotourism in The Gambia: Effects of sustainability communication on environments and rural livelihoods

ZEF Working Paper Series, No. 154

Provided in Cooperation with:

Zentrum für Entwicklungsforschung / Center for Development Research (ZEF), University of Bonn

Suggested Citation: Attemene, Pauline; Eguavoen, Irit (2017): Coastal ecotourism in The Gambia: Effects of sustainability communication on environments and rural livelihoods, ZEF Working Paper Series, No. 154, University of Bonn, Center for Development Research (ZEF), Bonn

This Version is available at: http://hdl.handle.net/10419/162195

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.









Working Paper 154

PAULINE ATTEMENE AND IRIT EGUAVOEN

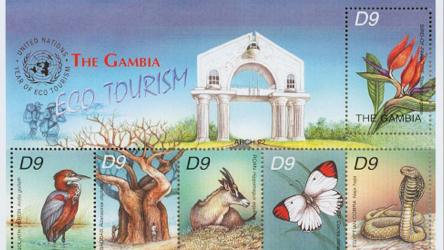
Coastal ecotourism in The Gambia. Effects of sustainability communication on environments and rural livelihoods

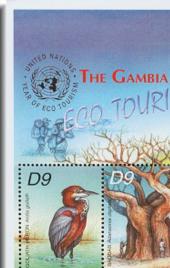




YEAR OF ECO TOURISM YEAR OF ECO TOUR







ZEF Working Paper Series, ISSN 1864-6638 Center for Development Research, University of Bonn Editors: Christian Borgemeister, Joachim von Braun, Manfred Denich, Till Stellmacher and Eva Youkhana

Authors' addresses

Pauline Attemene Doctoral candidate, Communication Sciences Research unit: Information, Communication and Art **Department of Communication Sciences** University Felix Houphouet Boigny Abidjan, Cote d'Ivoire

Tel: 00 225 87433129

Email: universlettres@yahoo.fr/pauline.attemene@etudiants.edu.ci

www.univ-fhb.edu.ci

Dr. Irit Eguavoen Center for Development Research (ZEF), University of Bonn, Walter-Flex-Str. 3 53113 Bonn, Germany Tel. 0049 (0)228-73 4912 E-mail: eguavoen@uni-bonn.de

www.zef.de

Please quote as: Attemene, P. and I. Eguavoen, 2017. Coastal ecotourism in The Gambia. Effects of sustainability communication on environments and rural livelihoods. ZEF Working Paper 154. Bonn.

Free download: http://www.zef.de/index.php?id=2213

Photograph on cover page from the internet (www.topical stamps.com)

Coastal ecotourism in The Gambia. Effects of sustainability communication on environments and rural livelihoods

Pauline Attemene & Irit Eguavoen

In memory of Dr. Musa Sowe
Former director of the WASCAL Master's Programme
Climate Change and Education

Abstract

This paper is based on a field study carried out in 2015 in two coastal ecotourism areas in The Gambia — Kartong and Tanji. The study investigated sustainability communication by tourism service providers in the context of climate change and ecovillage design education (EDE). With an inclusive approach to investigate communication, which integrates words, writing, actions as well as individual and collective behavior, the methodology was based on participant observation, semi-structured interviews with tourism service providers, local population, as well as the examination of documents. It has attended to answer the following question: how do ecotourism providers communicate sustainability issues in key areas, including education, marketing and networks activities in Kartong Ecotourism Area and Tanji Bird Reserve within the context of climate change? The findings highlight that sustainability-related ecotourism communication may help to prevent environmental degradation through encouraging more sustainable practices as a result of training resident communities, especially the youth. Sustainability communication in the case studies was not geared toward eco-tourists despite the fact that a small number of more knowledgeable business owners have included climate change and sea level rises in their communication towards potential customers. Findings illustrate that these service providers in tourism had succeeded in engaging young people and wetland communities in environmental action and in the production as well as the promotion of energy-efficient cooking and building technologies. Local income generation activities, such as oyster farming have been supported by ecotourism.

Keywords: communication, education, ecotourism, West Africa

Authors

Pauline Attemene is an expert in communication and community advisor from Côte d'Ivoire (Dipl. and post-graduate degree in Communication Sciences). She conducted the field study on ecotourism and received her MSc. degree Climate Change and Education from a WASCAL program at the University of The Gambia in 2016. After that, she has been working for several research projects in Abidjan besides implementing her doctoral research on social networks and climate change communication from an intercultural perspective.

Irit Eguavoen (Dr Phil. Social Anthropology) works at the Center for Development Research, University of Bonn, for the West African Science Service Centre on Climate Change and Adapted Land Use (www.wascal.org).

Abbreviations

ACCC Adaptation to Coastal and Climate Change (project 2009-2013)

CBT Community-based Tourism

COAST Collaborative Action for Sustainable Tourism (project 2009-2014)

DPWM Department of Parks and Wildlife Management/ Ministry of Environment, Climate Change,

Water, Forestry, Parks and Wildlife

EDA Ecotourism Development Area

EDE Ecovillage Design Education

GHG greenhouse gas

GoG Government of The Gambia

KART Kartong Association for Responsible Tourism

KEN Kartong Ecovillage Network

NAPA National Adaptation Plan of Action

NEA National Environment Agency

TDMP Tourism Development Master Plan

1 Introduction

In the late 1980s and early 1990s, some scholars (e.g. Fennell, 2015) saw a need to encourage alternative strategies to counter conventional mass tourism, which was held responsible for social and environmental degradation, particularly within coastal locations in developing countries. Ecotourism, in particular, has been promoted by development agencies since the 2002 United Nations' year of ecotourism. In scientific literature by Goodwin (1996), Weaver & Lawton (2007), Honey (2008), Wanga (2013), and Fennell (2015), ecotourism differs from conventional tourism in that it promotes nature- and culture-based travel activities, enhances public environmental awareness and the conservation of local resources. It minimizes the negative impact of tourism and provides a range of benefits for local communities. Simply put, ecotourism integrates three dimensions of sustainability: (a) ecological sustainability through enhancement of the conservation of natural ecosystems, and the maintenance of biodiversity; (b) socio-cultural and (c) economic sustainability can be linked to the different benefits obtained by local communities in line with their cultural beliefs and values. Traditional local knowledge¹ and technologies are essential to sustainable practices in using and managing natural resources. This does not imply that local implementation practices of ecotourism are always sustainable. Also the opposite may hold true. Local knowledge, perceptions and technologies should therefore be given greater consideration in tourism in order to understand the motivation of practices. Communication strategies for the promotion of or change towards sustainable practices could then be developed and strengthened.

The Gambia is a small developing country in West Africa with a population of less than two million inhabitants. The country has sea coast of 80 km and the River Gambia, in which both urban areas and a number of marine and riverine wetlands are concentrated. Despite having a comparatively small land mass of 10,000 km² and with a total area of 11,300 km² covered by rivers and water courses, the Gambian government has designated 85,269 ha of the area under legal protection. (GoG/DPWM 2013). This includes the 6,300 ha Tanbi Wetland Complex, which has had Ramsar protection status since 2007 and has been designated a National Park since 2008. Tanbi is of great importance because it remains "the largest intact WAMER [West African Marine Eco-Region] mangrove forest under protective status" (Carney et al., 2014, p. 127). The Gambia was one of the first African tourist destinations that witnessed the arrival of 300 tourists from Sweden through the initiative of a Swedish tour operator in 1965. However, despite the increase in tourists' arrivals in the 1970s and 1980s and the allocation of the area from Kololi to Kartong for tourism development by 1970 (Tourism Development Area 1), the foreign exchange earning capacity of the industry turned out to be limited because The Gambia was not a major tourism destination and also because the public investment in infrastructural development was not encouraging. In addition, during the 1980s, the country experienced a severe economic decline causing the government to disinvest in hotels' building and to leave the marketing aspect in the hands of tour operators. Things picked up again in 1996 and in 2005 the increase in tourist' arrivals by air charter only mounted up to 23 percent (90,000 tourists were recorded actually). About 16,000 jobs in The Gambia depended on tourism in 2004, a figure which is projected to increase to 35,000 by 2020. This is in addition to jobs in the

¹ Traditional local knowledge may include agricultural, environmental, medical, and knowledge associated with genetic resources. Such knowledge has been developed over the centuries and "passed on from one generation to another in such forms as stories, songs, cultural values, traditional laws, local languages, rituals, medical lore, agricultural practices" (Lossau & Li, 2011, p.11)

informal economy around tourism (TMDP, 2006)². Since 2002 the country has made determined efforts to exploit its ecotourism potential as an alternative and additional source of income for rural communities.³ As a result, ecotourism has been integrated into national development plans for poverty reduction and conservation strategies, as well as climate change adaptation measures. Ecotourism has been integrated with the management plans of several state and private agencies, including the Department of Forestry, the DPWM⁴, the Gambian Tourism Board, community forest managers and individual tourism operators. However, the proliferation of poorly coordinated community-based tourism projects, increased competition for tourist visits and revenues, and a low-quality ecotourism product poses serious risks (TDMP, 2006).

THE GAMBIA

THE GA

Figures 1 & 2: Stamps for the United Nations Year of Ecotourism in 2002

Source: internet (www.topical stamps.com)

To promote and maintain a high-quality ecotourism product, and therefore a better overall tourism product, the Gambian government has designated the coastal and marine zone from Kartong to Gunjur as an Ecotourism Development Area (EDA) (TDMP, 2006). At the same time, coastal protection from and adaptation to negative climate change impacts has been declared a priority in the National Adaptation Plan of Action (NAPA) (GoG, 2007). Implementation of some of these NAPA actions is ongoing within various projects, including a NAPA coastal adaptation project. However, very little is known about the way in which ecotourism service providers can implement and promote sustainable practices effectively in order to enhance and maintain healthy ecosystems that tourists are willing to pay for and that support local livelihoods. Given that sea level rises are projected to have negative impacts on urban areas in The Gambia, as well as on tourism in the coastal and marine zone (Jallow et al., 1999), an effective contribution by ecotourism to reduce the anthropogenic stress on coastal and marine environment could be a way to enhance the ability of these ecosystems to withstand climate change (Erwin, 2009) and thus ensure the long-term viability of coastal and wetland ecotourism. However, as Newig et al. (2013) have pointed out, sustainability-related issues

² Although broad estimates, the figures refer only to full-time jobs or full-time job equivalents such as tour guides, souvenir vendors, and so on (TDMP, 2006).

³ In 2002, the UN Year of ecotourism, the surmise around ecotourism potential as alternative income in rural communities led to the formulation of the Ecotourism Development and Support Strategy for the Gambia.

⁴ Based on the number of tickets sold and the tourists who complete a form on their arrival, a total of 1,243 tourists were recorded in five coastal protected areas (Abuko Nature Reserve, Kiang West National Park, Tanbi Wetland National Park, Tanji Bird Reserve and Baobolong Westland Reserve) between December 2013 and April 2014. Of these, 641 were male, 577 female and the remaining 25 did not indicate their sex (DPWM database, 2014).

are characterized by high complexity and uncertainty and require multi-stakeholder cooperation. They have also emphasized the importance of engaging effective sustainability communication in consensus-based initiatives (Newig et al., 2013).

The empirical field study on which this paper is based investigates the agents, the ways and the motivations of communication and training strategies on climate change and sustainability as well as the direct outcomes of these strategies on local environments.

The study was carried out in 2015 in two Gambian ecotourism areas (Kartong and Tanji) in order to investigate sustainability communication by tourist service providers in the context of climate change and ecovillage design education (EDE) training. The study uses an inclusive approach to communication, which integrates words, writing, actions and social behavior. In the form of local knowledge and perceptions, education and training, as well as the form of advertisement, investments and practices. The case study used 59 semi-structured interviews with tourist operators and staff, communities' representatives (local authorities, executives of community-based structures), representatives of regulatory bodies, NEA, coordinators of ACCC and COAST projects, tourism associations, ground-handler of a UK-based tour operator, Non-governmental Organizations as well as tourist' guides, EDE facilitators and participants. Participant observation was conducted in the two eco-tourist destinations Kartong and Tanji. The documents examined include policy and strategy documents, a Memorandum of Understandings between the DPWM and the Gambian Tourism Board, reports about projects including ACCC, COAST, and the EDE 2014, as well as brochures, leaflets, websites, or other published and unpublished studies. Recent materials about the EDE (from 2015) were also reviewed.

After discussing and defining what is meant by the term "sustainability communication" in Section 2, Section 3 introduces the two case study locations, Tanji and Kartong, and the concept of EDE, which originated in Kartong. In Section 4, we then present our analysis of sustainability communication in these ecotourism destinations. Section 5 illustrates the knowledge gap on climate change among tourism operators and identifies local trajectories of blame for wetland degradation. In Section 6, we show how the training program successfully combined sustainability communication and climate change education. Section 7 presents our conclusions.

2 Sustainability communication in coastal ecotourism

Sustainability in the context of tourism has been of interest to researchers for some time (Reddy & Wilkes, 2013). Originally restricted to the idea of a sustainable economy, the meaning of sustainable development—or sustainability—has been redefined and enriched over the years. Today, it refers to the integration and interdependence of the four circles of the sustainability model: ecological, political, economic and cultural. However, as global priorities shift and additional stressors such as climate change increase, it has become increasingly difficult to realize the vision of preserving the environment of today for future generations while at the same time allowing for economic development (Reddy & Wilkes, 2013).

Research on communication dealing specifically with sustainability issues has recently gained increased momentum as a result of global issues like climate change. Sustainability communication is a recent research field that encompasses three areas: climate change, corporate social responsibility, and sustainable consumption (Newig et al., 2013). However, scholarly debate has been focused on how broad sectors communicate sustainability issues. Newig et al. (2013) investigated the sustainability-related communication of the following six societal subsystems: civil society, education, mass media, science, politics, and the economy and industry, in the German context. Using a typology that distinguishes between the communication of sustainability, communication

<u>about</u> sustainability and communication <u>for</u> sustainability, they note the evolution of sustainability communication:

"Started as an elite discourse, sustainability-related issues are routinely communicated from elites to their respective base of constituency. However, a gradual shift can be observed from [communication of sustainability] to [communication about sustainability...]. This may be an indication of an increasingly participatory discourse, moving from elite to a more egalitarian approach" (Newig et al., 2013, p. 2985).

According to the authors, communication of sustainability focuses on the sender-receiver flow of information, where more knowledgeable "experts" inform and educate others considered as laypersons. In communication about sustainability, on the other hand, issues are discussed and framed using a horizontal flow of information. Sometimes interchangeable with communication for sustainable development, communication for sustainability embraces the normative aspect of sustainable development, where the "objective is to facilitate societal transformation toward the normative goals of sustainable development" (Newig et al., 2013, p. 2980).

Communication, on the other hand, has been defined in many different ways as communication research evolves. In its most basic definition, communication refers to the act of transmitting information, which may include thoughts, ideas, and emotions. In this paper, however, communication goes beyond this traditional use, which is restricted mainly to verbal and non-verbal language. Here, communication refers to any expression "voiced" by the actors that makes sense for them in their different contexts (Mucchielli, 2001).

Sustainability communication, therefore, should be understood as any expression by the actors—verbal and non-verbal language as well as social behavior and concrete action—that can be "read" in the context of the actors as encouraging or discouraging biodiversity conservation, the maintenance of healthy ecosystems, local development, and climate change adaptation and mitigation. Nevertheless, the focus here will be on oral and written communication as well as the service providers' concrete and tangible actions with regard to conservation, local development and climate change communication. In addition, using the typology of Newig et al. (2013), this paper analyzes the practices of sustainability communication, although tourism service providers in the Gambia tend not to use the term explicitly, preferring the term "environmental communication".⁵

3 The case studies and EDE training

Two coastal and marine areas in The Gambia were selected for the study: Kartong Ecotourism Area and Tanji Bird Reserve. These areas were selected for the study due to the implementation of two regional projects, which linked conservation, ecotourism and climate change issues (see below). The development of ecotourism has a high priority in these areas and has been strategically integrated with the national Tourism Development Master Plan (TDMP), which recommends that:

"Attention should be paid to the quality of services and products offered and to attractions and amenities, ecosystems, handicrafts and local products on offer, construction standards and the nature of materials used in construction. [Also]

_

⁵ Although environmental communication should not be opposed to sustainability communication, one explanation may be that within the framework of the Gambian Environmental Action Plan adopted in 1992, a national environmental education and communication (EE&C) strategy has been developed and implemented since 1996 (the strategy was revised and strengthened in 2008). The EE&C Unit at NEA is tasked to make a "strategic use of traditional communication strategies to support effective policy making and project implementation geared toward environmental sustainability [e.g ACCC and COAST Projects]" (NEA, 2011, p.7)

International charters, labels and codes of conduct targeting both the tourism service provider and the visitor should be considered." (TDMP, 2006, p. 35).

Tanji Bird Reserve, situated on the Atlantic coast in the West Coast region of the country, is one of the four protected marine areas in The Gambia. It is governed by the Brikama Local Government Area (the most populated administrative region among the eight regions in the country⁶) and is part of Tourism Development Area 1. Beyond its scenic beauty, bird species are numerous. The area is important for birdwatchers because of its great ornithological biodiversity⁷. Until recently (2012), few tourist facilities have been developed, including, a visitor centre, trails, toilet, post guards. The only eco-lodge inside the reserve could accommodate in 2015 up to sixteen (16) guests with its eight (08) twin-bedded rooms (bungalows). Although local communities in the past benefited from tourism to some degree, their real involvement began with the Adaptation to Coastal and Climate Change (ACCC) project (2009–2013)⁸, a regional project (outside the NAPA action framework) that built an eco-lodge within the bird reserve. As the former coordinator of the project explains:

"The project focus was on communities as well as environment, conservation and livelihood. Like what could be done to enhance adaptation forces in the coastal zone".9

Most importantly, Tanji Bird Reserve was chosen for this study because of its vulnerability due to the high pressure on natural resources exerted by the four peripheral villages: Tanji, Brufut, Madyana and Ghana Town. A private contractor was running the eco-lodge in 2015, while a benefit-sharing mechanism had been put in place between the private operator, the four local communities and two government institutions (the DPWM and the National Environment Agency, NEA).



Figures 3 & 4: Tanji Bird Reserve Eco-Lodge



Source: Attemene, 2015

The Kartong Ecotourism Area, on the other hand, comprises a coastal area that has been designated as an EDE within Tourism Development Area 1¹⁰. In addition to Kartong it includes other villages like

⁶ In 2013, the population in Brikama Local Government Area accounted for 37.2 percent of the total population.

⁷ Based on the number of tickets sold, a total of 349 tourists (birdwatchers from United Kingdom mainly) were recorded in 2013 but in 2015, there only 232 tourists were because of the Ebola outbreak in West Africa (interviews transcription, 2015)

⁸ Fully entitled "Adaptation to Climate Change - Responding to Coastal Change and its human dimensions in West Africa through integrated coastal area management (ACCC)," the project was intended to be implemented in Mauritania, Senegal, The Gambia, Guinea Bissau, and the Cape Verde Islands. The project was funded by the Strategic Priority on Adaptation/United Nations Development Program. The Gambia serves as the pilot site and the project was implemented by the NEA.

⁹ The coordinator of the project from 2009 to 2012.

Berending, Madina Salaam, and Gunjur. However, situated 43 km from the capital Banjul and near the Senegalese Casamance Region, Kartong is the focus of a number of initiatives in terms of community-based tourism projects and private entrepreneurship. The majority of ecotourism businesses within the EDA are located in Kartong, with a few in Gunjur, and fewer still in the other villages (two, for example, in Madina Salaam). With a population of almost 5,000 inhabitants in 2013, Kartong, which is also part of the Brikama local development area, is one of the oldest settlements in The Gambia. Its natural environment was seen as favourable to ecotourism activities at the start of the TDMP, according to the Director of the Tourism, Product Development and Culture at the Gambian Tourism Board¹¹. In addition, Kartong has witnessed a number of development initiatives, including the Collaborative Action for Sustainable Tourism (COAST) project (2009–2014)¹². With the aim of reducing the harmful impacts of tourism on coastal ecosystems through economic incentives, the project contributed to community leaders' awareness of the importance of making informed choices in terms of investors, tourism projects, and environment stewardship (personal communication, March 2015). In fact, Kartong was selected from three coastal communities to become the pilot site of COAST. The second phase of the project was in progress during 2015.

EDE was initially limited to Kartong (2014). However, through the initiative of a tourism operator in collaboration with the Gambian Tourism Board, EDE training in 2015 has developed into a public-private partnership, involving sustainable and responsible tourism and sustainable agricultural practices. We will discuss the set-up and content of the training in Section 6.

Tab 1: Existing ecotourism facilities in Kartong Village¹³ (five ecotourism shops were excluded)

	Name of Facility	Proprietor	Location
1	Sandele Eco-Retreat	Gamspirit Ltd	Sandele
2	Tesito Eco Camp	Village Development Committee*	Tesito
3	Starla Adventures	Kebba Jatta	Halahin River
4	Tambakuruba Eco Lodge	Lamin Jamba Jammeh	Berekolong
5	Halahin Eco Bar and Restaurant (Eco-lodge)	Buba T. Jaiteh	Berekolong
6	Boboi Bar and Restaurant (Eco-lodge)	David Crawford (M. Lonka)	Boboi
7	Mama Sanchaba Camp	Jerreh Touray	Kafaya

¹⁰ The 10 Tourist District Areas (TDAs) are TDA 1: West Coast (from Cape Point to Kartung); TDA 2: Brikama; TDA 3: Western River; TDA 4: Jufureh; TDA 5: Banjul; TDA 6: North Coast; TDA 7: Kiang West; TDA 8: Baobolong Wetland; TDA 9: Central River; and TDA: 10 Upper River (TDMP, 2006).

¹¹"Gambian coastline attractions are mainly beach, sand dunes, forests [which have been destroyed by local residents] and then communities; yet, we realize that Kartong area has all the natural environment that supports ecotourism [no road, electricity and water supply at that time]; other features [such as] the forest, communities' involvement in tourism, a river in the area, culture and a national site preserved for tourism activities, the Folonko crocodile pool; also a number of tourists were coming to these places for these reasons; based on that the tourism development master plan has designated that area as ecotourism site; but of course that doesn't mean that it is the only site, we can have ecotourism anywhere as long as you have all the natural environment". (Director of Tourism Product Development and Culture at the Gambian Tourism Board, Interview transcription, 2015)

¹² As a project funded by the Global Environment Facility (GEF) with the United Nations Environment Program (UNEP) as the implementing agency and the United Nations Industrial Development Organization (UNIDO) as the executing agency, in partnership with the United Nations World Tourism Organization (UNWTO), the COAST Project was implemented in Cameroon, the Gambia, Ghana, Kenya, Mozambique, Nigeria, Senegal, the Seychelles and Tanzania.

¹³ Ecotourism facilities in Kartong are mainly eco-lodges and bars and restaurants. Almost all the eco-lodges are privately owned. More than half of the facilities are owner-managed businesses. In addition, of 14 facilities included in the case study, 7 have less than 5 staff (mainly bars and restaurants), 6 have between 5 and 10 staff and only 1 facility has more than 15 staff. No facility exceeds 20 staff. According to the Gambian Tourism Board hotel classification, these are small-scale businesses. Staff are recruited from local communities (Interview transcription and participant observation, 2015).

8	Fang-Soto Bar and Restaurant**	Ousman Jabang	Kenikoring
9	Sambou's Restaurant	Bansang and Yaya Sambou	Sambou Kunda
10	Lemon Fish Gallery (partly eco-lodge)		Kajinkang
11	Oupakola Bar		Demba Kunda
12	Sun-Set Restaurant	Pa Sambou and A. Touray	Halahin River
13	Pelligan Restaurant***	Lamin Jamba Jammeh	Halahin River
14	Denkula Eco Restaurant	Not functioning	
15	Bamba Dinka Restaurant		

^{*}The only community-owned eco-lodge was not operating in 2015 due to renovation work (the second phase of the COAST project)

(Source: Updated from COAST Project Value Chain Analysis Report (COAST), 2010)

4 Sustainability communication in practice

Service providers and a number of business operators¹⁴ (10 out the 23), tourism-based non-governmental organizations (NGOs), community-based organizations (CBOs), and government offices have initiated sporadic environmental education programs. In the Kartong Ecotourism Area, for example, the initiators of educational activities are mostly tourism operators working in collaboration with the Kartong Association for Responsible Tourism (KART) and local/regional government offices. It should be noted that KART and the government have initiated some community education on their own. According to the tourism operators who carried out educational activities, they did so by partnering with other organizations on a win-win basis. For instance, they allowed other organizations to use their facilities, as a tourism operator in Madina Salaam revealed. He argued that the search for donors is both a necessity and a challenge since educational activities are very expensive. Educational projects are also integrated with the marketing of ecotourism businesses and have become attractions in themselves:

"coupled with environment and home-based activities. Once you attach that to the website, whoever sees it will say this is the sort of thing I want". 15

In Tanji Bird Reserve, educational activities are either part of projects funded by the DPWM or integrated with the key business activities of particular service providers. Tanji Village Museum, for example, receives school visits and provides tour guide activities on site¹⁶.

Educational communication in Kartong and Tanji ecotourism follows the same sender-receiver flow of information. Sometimes committees are created where the horizontal flow of information is used for consensus-building. There are many issues. For example, with regard to the sender-receiver approach, one issue relates to the messengers who deliver the information. As Moser (2010, p. 40) argues: "[messengers] are also critically important in establishing the credibility of the information

¹⁴ Tourism businesses range from specialized (eco-lodges, eco-retreat, eco-resort, restaurants and protected areas) to non-specialized businesses (farm, solar drier, research center, gallery, etc). The non-specialized businesses are those that incidentally serve eco-tourists and/or ecotourism products (Weaver & Lawton, 2007). ¹⁵ Tourism operator/Gambian (located in the neighboring village, which is part of the Ecotourism TDA (Interview transcription, 2015).

^{**}not operating in 2015

^{***}Still at the same location but the name changed in 2015

¹⁶ Few other structures have been included in the case study because of their connection with Tanji Bird Reserve. Tanji Village Museum for example, is located not too far from the reserve and was part of a Bijol tourism package, which included Kartong Snake Farm. Despite the fact that the package aimed to diversify the activities offered to tourists in Tanji Bird Reserve, it was unsustainable as it lacked a well-coordinated marketing system, according to one operator.

conveyed". Whereas on-site tour guides are the most active in Tanji Bird Reserve, small teams are normally used to convey information to local communities in both Tanji Bird Reserve and the Kartong Ecotourism Area. The selection of messengers can be based on their expertise (external educators, government officers, community rangers) or they may have been trained as trainers. In fact, trainers within communities are selected to upgrade their knowledge and skills in order to train/inform larger numbers of other community members. In some cases, however, they may encounter difficulties because they are seen by local communities as coming:

"with [a] different concept; especially if they see you working with white people, they will think that they have put new ideas in you that come from the sky". 17

In other cases, however, the participation of European foreigners may reinforce the credibility of the messengers and their messages, as the EDE initiator explains: "they [EDE graduates] made me go to the villages; they said ... it is most important when there are white persons there".

The function assigned to communication in educational activities reveals communication mainly in its instrumental dimension, which focuses on the transmission act and how to best achieve the desired effect on its targets. For both cases, communication is, therefore, a way to achieve the objective of changing undesirable behavior into more sustainable behavior. In the same way, information as knowledge becomes a central element in changing the practices of others. Ineffective communication is sometimes blamed on local residents who "do not want to face reality", "resist change" or are "difficult"¹⁸. Therefore, sufficient attention may not be paid to the psychological determinants of the behavior they are trying to change (Van der Linden, 2014), or to whether the expected (desired) behavior makes sense for the beneficiaries in relation to their social norms¹⁹ (Bahi, 2006)

In the case of Kartong the audience or target group mainly comprises local communities (whole villages) or selected groups within a community. Tanji Bird Reserve regularly targets park and museum visitors as its audience. Schools and communities who are in the vicinity of the parks are also targeted through the Site Management Committee²⁰. Staff and local youth are another audience mainly for training and job opportunities through externally-funded projects such as the ACCC project (2009–2013). Guests (overnight stays) are the focus of the eco-lodge inside Tanji Bird Reserve. The scope of these activities, however, reveals that apart from the leading ecotourism facilities in the area, most tourism operators are not really engaged in education programs, limiting their on-site activities to maintaining the area's attractiveness to tourists:

"I have never done that [group sensitization]. Although, what I try to do most when it comes to sensitization, is to sensitize especially boys [who come here and along the

¹⁷ EDE 2014 graduate and community member (Interview transcription, 2015).

¹⁸ Views of one messenger (EDE 2014) and a tourism operator who initiated a community-based workshop for environmental protection (Interview transcription, 2015).

¹⁹ Kartong did not send participants to the EDE 2015 because village leaders did not appreciate the initiative of the 2014 EDE participants to organize themselves into a network instead of integrating the existing structures at the village level. For them, it was an attempted coup while some KEN members viewed their initiative as a way to be more effective.

²⁰ The Site Management Committee was set up around 2003 with the main purpose to involve communities in the management of the park in order to stop illegal activities occurring there. It is composed of almost 30 members, including representatives from the four villages of Brufut, Tanji, Madyana and Ghana town. Since the reserve is located in Brufut, Brufut, as the traditional owner, has the largest number of members. The three other villages have four members each, with an emphasis on gender parity, according to the chairperson. The selection of representatives from each village is a political and cultural process, par excellence. In Brufut for instance, each Kabilo (family name, such as the Sanneh, the Manneh) selects two people to represent the family. In addition, representatives of Kafos (associations) are added. Examples include fishermen, fish smokers, female gardeners, etc. But most importantly, the people selected from any community must be "people who are willing to sacrifice without being paid" (Chairperson, Interview transcription, 2015).

beach]. I talked about security and tranquillity. In other places, they call them bumsters [local term for young Gambian men lusting for relations with foreign female tourists]. We don't have bumsters here."²¹

Representatives of local communities and tourism operators expressed interest in improving the communication of local norms and values to tourists. These include back packers, bird watchers, students and volunteers, retired women and workers wanting to help. Sustainability-related information includes the way communities deal with the following types of issue: the use of energy-efficient building technologies, including the rocket stove and compressed stabilized earth blocks technology; livelihood diversification; environmental protection; safety and security along the beach; tree and mangrove planting; and the principles of responsible tourism. However, all contents combined, the discourse focuses mainly on changes in practices. In other words, unsustainable behaviour is condemned and blamed, whereas sustainable practices are encouraged. In contrast, discourses in Tanji are commonly information-centred. In other words, discourses are explanatory rather than prescriptive and avoid the blame game:

"We have our own approach. Instead of sensitizing [local] people on what to do or not to do, we sensitize them to the use of trees, how we can use trees for many purposes. People are aware of the value of trees."²²

As stated above, concrete actions by tourism service providers toward poverty reduction and environmental protection are expressions (communication) of what makes sense for them in terms of how they perceive their roles regarding sustainability. These expressions may be "read" as either encouraging or discouraging sustainable practices in Kartong and Tanji. In Kartong most important activities directed at local communities include youth employment. Some tourists feel encouraged after their visit to support the education of one or two students in a very poor family over a period of time. Tourists are encouraged to sponsor local education and school fees. Another indirect expression is the sponsorship of KART by membership fees or by paying rent for communal facilities. One Kartong native explained how tourism operators help make the activities and needs of female oyster collectors known to tourists so that local women can earn additional income. For example, the women are encouraged to showcase their way of processing and cooking the oysters. Tourism operators have supported local communities by purchasing the boats that the oyster collectors now use collectively, as one bar and restaurant owner commented:

"[The women] make this oyster to pay their children's school fees. So we help them. I've pushed about four people helping. They bought these boats. And others made [built] this small market for them. And we have other promises from some people that they would help them [the oyster collectors]. We don't beg tourists. We market the ladies."²³

By supporting the oyster collectors, who earn a livelihood typical of the Gambian wetlands (Crow & Carney, 2013), but which is not common in foreign countries, tourism operators also create additional attractions for their tourist destinations - a picturesque oyster market with fishing boats, and so on. By doing this and by making local oyster collection part of their tourist program, they build tourist awareness of local livelihoods and wetland ecology.

²¹ Tourism operator/Gambian (Interview transcription, 2015).

²² Tourism operator/Gambian (Interview transcription, 2015).

²³ Tourism operator/Gambian (Interview transcription, 2015).

Figures 5 & 6 Signboard around oyster collector's place (left), shells prevent sand erosion (right)





Source: Attemene, 2015

In Kartong, the activities of ecotourism operators are geared toward resource conservation, rehabilitation, or both. Conservation activities include habitat protection, fighting tree felling, unsustainable oyster' harvesting practices, illegal hunting or bushfire through a committee set up for managing mangrove forests, for example, as well as natural protection of their territory (dissuade people from illegal settlement). Rehabilitation deals with in-situ tree planting to replace trees cut down when putting up facilities, afforestation along the beach to mitigate sand erosion (with coconut trees, especially), periodic collective mangrove transplanting, as well as donations to support Kartong youth activities for environmental protection.

In Tanji Bird Reserve, local poverty is reduced by employing people from the four peripheral villages. There are also a number of initiatives to support employment projects for local residents. A park manager stressed on-going initiatives such as employment development, which include the ecocamp, bee-keeping and the cultivation of wood lots. Conservation activities by Tanji tourist operators were the same as reported in Kartong whereas rehabilitation activities include in-situ planting of fruit trees, periodic mangrove transplanting (sponsored by DPWM donors), and assisting the Tanji Protected Area. One tourism operator in Tanji Bird Reserve stressed the use of small in-situ measures to encourage biodiversity, including not allowing children in the eco-camp.

Figures 7 & 8: Mangrove transplantation in Kartong (left) and in Tanji (right).





Source: Attemene, 2015

Finally, the sale of souvenirs by tourist operators generates additional incomes for locals through production and sale. The portfolio of products that are taking up educative messages and encourage thinking about environmental conservation (e.g. games, posters, postcards, booklets, cotton bags and recycled products made in The Gambia) could surely be increased and improved.

Figure 9: Tourist market with cultural wood carvings





Source: Attemene, 2015

5 Perception of climate change impact and the blame game

In this section, we look at how climate change is perceived and how blame is assigned. First, from the perspective of tourism operators and other business people and non-residents, the sustainability of their businesses depends largely on beautiful natural scenery, which is destroyed by the local residents. A degraded natural environment is less attractive to tourists, and leads to less satisfied customers, fewer tourist visits, eventual business collapse, increased local unemployment, and finally to decreasing income for village residents. As one foreign tourism operator emphasized, there are local income-generating activities which entail trade-offs for ecotourism:

"The thing we are concerned about here... because they [the local population] cut all the trees to sell. It is something we disagree with completely. We understand they are selling these woods to make money."²⁴

"When I came to Kartong, this is my father's groundnut farm [used partly to build the Eco-lodge]; people were cutting trees, selling them. I asked them not to do that anymore. I started chasing them. That's why I still have trees. If you look around, people are cutting trees."²⁵

These views help explain the focus of educational activities with regard to local communities as well as the sender-receiver approach, with messages centred on behavioural change. In these trajectories of blame, the local residents are presented as if they do not know the value of their forests and natural environment, and as if they have to be taught in order to change their income strategies. However, generating income is not just a matter of better knowledge but mainly a question of daily needs and locally available job options. Although the range of alternative jobs is limited in coastal

²⁴ Tourism operator/Foreigner, Interview transcription, 2015. The irony is that this operator, according to two other respondents, has cleared an entire area to develop a private beach. The author has even seen the place. The operator himself acknowledged that a lot of trees were cut down to build the resort. During the next rainy season, he plans to plant a lot of trees to replace the trees that have been felled. The reader should be aware that the ecotourism facility is new, less than two years-old.

²⁵ Tourism operator, Kartong Ecotourism TDA (Interview transcription 2015).

communities²⁶ like Kartong, the community's representatives encourage locals not to rely on tourism exclusively:

"because tourism is a very fragile situation [so] we are promoting diversification of livelihood [more education, professional training, for example] so that without the tourism you can survive²⁷."

Conversely, they have expressed concerns about the degradation of the environment. However, they emphasized the adoption of a legal framework at community level through Kartong's Responsible Tourism Policy (2005)²⁸, which firmly underlines Kartong's commitment to promoting "eco-farming, environmental protection ... In so doing, Kartong hopes to be an exemplar for other Gambian communities" (Kartong's Responsible Tourism Policy, 2005, p. 1).

Secondly, most tourism operators, despite being educated and having more than five year's work experience, either lacked knowledge on climate change or said they were aware of the issue but did not know anything about it. The most knowledgeable tourism operators were those involved in the 2015 EDE training program, which included climate change education. Both tourism operators and village representatives claimed that the causes of climate change were anthropogenic. This was the case even with those respondents who claimed to know nothing about climate change. Global greenhouse gas emissions and local practices such as "the way we turn wood into charcoal [for Tanji fish smoking]" were seen to cause climate change. Evidence of any climate change impact in Kartong was denied by village representatives, whereas tourism operators stressed its impact. This was emphasized with regard to Tanji Bird Reserve, with evidence of sand erosion on Bijols Islands. In Kartong, the tourism operators imagined a negative future scenario. Most see climate change as destructive through its potentially negative effects on weather, sea levels, forests, the Halahin River and related natural resources, including mangrove forests. The operator who initiated the EDE training reasoned:

"I don't think, there is a positive impact. [...] It is scary; We think about sea level rises, potential diseases; and all the things ... which will lead to a kind of economic crisis, breaking down everything we know."³⁰

As a consequence, climate change is expected to negatively impact ecotourism through higher temperatures, fewer tourists, and the destruction of coastal and river attractions, resulting in loss of employment at all levels across the country:

"It is going to be devastating; Halahin River [for example] is the pride of Kartong especially those in tourism. But ... the mangroves started dying. We believe that those mangroves are dying because of the changing climate. If mangroves should die, the

²⁶ Fisheries and tourism are the main income source activities for communities living along the Gambian Coast. But an increased interest in horticulture has been noted. In 2006, this sector contributed 4% of GDP through its links with the tourism industry (TDMP, 2006).

²⁷ Community member, former executive CBO Kartong (Interview transcription, 2015).

²⁸ Kartong is the first and only community to have defined its responsible tourism policy at community level. This local innovation is the result of another local institutional innovation, namely, the setting up of a CBO for tourism matters in Kartong (KART). According to village leaders, most of the funding (projects) is secured because of and through KART (interview transcription, 2015)

²⁹ Tourism operator, Tanji Bird Reserve (Interview transcription 2015).

³⁰ Tourism operator, foreigner, Kartong Ecotourism TDA (Interview transcription 2015). This operator is the initiator of EDE training in Kartong, which includes climate change education and communication.

beauty of the place is gone. This will not affect our business only but the livelihood of people, the whole Kartong, Gambia and even outside of the country [Senegal]."³¹

One business operator, who satisfies all his entire energy needs through solar panels, suggested that climate change would be a threat due to unexpected changes to weather patterns and more cloudy days. He saw the sustainability of his business in danger. In Tanji³², climate change was also expected to have negative impacts. An operator underlined the urgency to do something to counter climate change because otherwise the parks and the eco-lodge would be somehow affected. Others stressed the impact of climate change on migratory birds and the resulting loss of biodiversity due to sand erosion on Bijols Islands. These responses reveal some awareness about how climate change could impact tourism activities. They also illustrate, however, that tourism operators lack general knowledge about how climate change will probably affect the wetland ecosystem, and their businesses. Their perceptions of the observable impacts of climate-related change were almost identical in Kartong and Tanji, and included deforestation, waste dumping and coastal erosion. Kartong has a special record on the destruction of mangrove forests, whereas in Tanji the loss of biodiversity was noted. Respondents also took up one notion from the questionnaire, which emphasized the outbreak of diseases in relation to climate change. However, they referred to the Ebola epidemic, which did not affect the Gambia but was prevalent in neighbouring countries during the time of research. All West African tourism was negatively affected by the Ebola epidemic.

Finally, ecotourism operators considered ecotourism as a positive contribution to both the environment and local communities. They therefore included these aspects in their sustainability communication and marketing strategy (fostering the resilience of ecosystems and the community by different activities). In addition, they stressed the need to facilitate awareness building and behavioral change in local populations and among tourists. A professional foreign guide, specializing in bird tours, was keen to support any initiative for wetland protection "because this is ultimately the diamond of Kartong." In Tanji Bird Reserve, the connection was less explicit although the community representative explained that:

"[M]ost of the funding comes through climate change [the ACCC-project for example] and people need to know about the climate change. [Therefore] both project developers and park management need to sensitize us more about climate change because we need to go back to our people to tell them what climate change is."³³

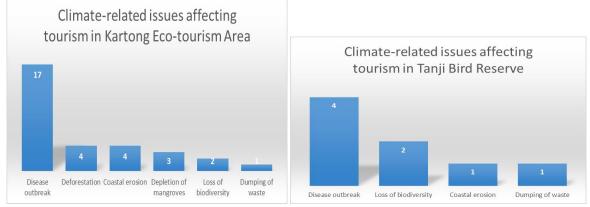


Figure 10 & 11: Climate-related issues from the operators' perspective

Source: Interviews transcriptions, 2015

³¹ Tourism operator, Kartong Ecotourism TDA (Interview transcription 2015).

³² It is important to mention that tourism operators in Tanji Bird Reserve include operators more or less related to ecotourism though operating outside the reserve.

³³ Community representative from Tanji Bird Reserve (Interview transcription, 2015).

6 EDE training in 2015: Approaching sustainability and climate change

In contrast to 2014, EDE training in 2015 encouraged youth leadership and local ownership in order to engage communities with sustainable tourism and agricultural practices. Graduates of the 2014 course, who had organized themselves into the Kartong Ecovillage Network (KEN), undertook a series of communication activities. These activities included a pre-training awareness campaign across the villages, meetings with local authorities, and the selection of participants (from 9 villages) with the exception of those from Casamance Region in Senegal and Guinea Bissau (the embassies took in charge the selection process). According to one KEN member, they:

"look for people who are respected in their communities, who will be able to report back to their communities. Also people who are good at English because at the end of the day, you become a designer and you need to understand all these things ... So we screen and communities need to be observers to be satisfied with the selected people."³⁴

The local ownership of KEN was emphasized by making it part of the 2015 EDE team together with an international faculty (mainly the Global Ecovillage Network). According to one local facilitator at EDE 2015, this mutual support enriched the content of the training "by providing some local examples". For example, "[the trainer] was talking about linear thinking and safety thinking. Something like that you would need examples of things that everyone here knows."

EDE training focuses on four dimensions: world view, and ecological, economic, and socio-cultural sustainability. Global warming was given special attention. Other modules including non-violent communication and community-based tourism (CBT) were added. The CBT module stressed the important role that tourism could play in building resilient communities since:

"Sustainable CBT [was] economically viable, ecologically sustainable, institutionally consolidated, [involving the] equitable distribution of costs and benefits." 35

In addition, EDE 2015 included two weeks of permaculture training, introducing sustainable farming techniques, adaptation measures for climate change, renewable energy, and energy-efficient building technologies. One KEN member emphasized his vision:

"The rocket stove [for example] can be built at a low cost. Instead of bricks, you can use cop (earth and grass mixed together). That is what we use also to build here [in Sandele Eco-retreat] using the compressed [and stabilized earth] blocks technology. It also costs you lower than this cement and is five times stronger than cement. And when it is very hot, it is always colder inside. And if it is very cold outside, it is hot inside ... My brother and I have a dream: use our big land and build our house using this technology. Live with nature, trees everywhere; see birds, squirrel, and snakes, all having their freedom." ³⁶

It is important to emphasize the four outcomes of EDE training with regard to sustainability. These comprise the active involvement of the local population, career moves for participants, the extension of KEN to 2015 graduates, and increased climate change awareness. KEN members followed traditional rituals when visiting villages and also sought support from "two elders' councils covering

³⁴ EDE local facilitator and member of the Kartong Eco-village Network (KEN).

³⁵ EDE (2015) PowerPoint presentation delivered in a classroom setting. The author is Dr Marina Novelli, facilitator of EDE 2015

³⁶ EDE 2014 graduate, local facilitator (2015), and member of KEN.

this area and spoke to what we call the entrance point of each village. In some villages it will be the Village Development Committee." After these pre-training campaigns, many people wanted to become part of the EDE.

With regard to career moves, every graduate becomes a certified ecovillage designer and can act as an EDE facilitator anywhere in the world. Some graduates obtained scholarships for a Master's degree in Sustainability Studies. Some were hired by the leading eco-lodge (Sandele Eco-Retreat):

"Before I did the EDE, if someone could have told me that I would work in Sandele, I would say no. My whole world view changes."³⁷

Graduates helped to foster climate change awareness along the coast by returning to their villages and organizing meetings and giving reports. During such a meeting in Sambouya, graduates addressed health treatments using indigenous plants, sea levels, deforestation, the conservation of turtles, sustainable tourism, and the dangers posed by plastics bags.

7 Conclusion

The findings highlight that sustainability-related communication in ecotourism may help to prevent the degradation of the environment through the promotion and encouragement of sustainable local practices as a result of training resident communities and especially youth. Sustainability communication was not geared toward eco-tourists despite the fact that a small number of more knowledgeable business owners have included climate change and sea level rises in their communication towards potential customers. These service providers in tourism had succeeded in engaging young people and wetland communities in environmental action and in the production, as well as the promotion of energy-efficient cooking and building technologies, such as rocked stoves and compressed stabilized earth blocks. Local livelihood activities, such as oyster farming have been supported by ecotourism. Based on these success stories, the paper recommends strategic planning of sustainability and climate change communication in order to support sustainable strategies for coastal ecotourism in the Gambian context.

In both case study areas, ecotourism was seen by interview partners as one way to strengthen local communities that can withstand negative climate change impacts. Sustainability communication focuses on issues such as poverty reduction, conservation of the cultural and natural heritage, and, more recently, on climate change and sea level rises. Communication, by tourism operators in particular, is geared toward the reduction of climate stressors, such as local deforestation. The EDE initiative included climate change education that aimed to facilitate ecotourism along the coastline. This is one way to enhance the resilience of ecosystems to withstand (adapt to) the negative impacts of climate change (Erwin, 2009).

In addition, in both study areas, the perceptions and practices of tourism businesses are in line with the agreed criteria on ecotourism (Weaver & Lawton, 2007). As a positive outcome, there was an increased awareness of the impacts of tourism and change to more sustainable practices by community members in Kartong. This is an important factor in achieving sustainable tourism supported both by KART and a number of independent tourism operators. In Tanji Bird Reserve, the joint venture partnership with the private sector was seen as good practice, although there is a need to ensure a well-defined benefits-sharing mechanism to avoid conflicts in the future.

Climate change projects still tend to neglect the climate change education component and, when they include it, educational activities have a local perspective that largely ignores global causes of global warming. As a result, activities and recriminations also remain at the local level. Another

³⁷ EDE 2014 graduate, staff and local community facilitator (Interview transcription, 2015).

option, for example, would have been to sensitize tourists about the causal linkages between greenhouse gas production in Europe (including high emissions caused by their air travels) and indirect negative local outcomes in the Gambia. Though being tricky (as The Gambia wants to continue attracting European tourists), one should communicate more about or even set up GHG compensation schemes that benefit environmental protection in the Gambia, as well as find ways to encourage regional tourists (from Senegal, for example) to book tourism destinations in The Gambia. West African middle classes (and their youth) would be a rather new ecotourism audience. But with regard to sustainability communication and its supportive role for climate change adaptation and environmental protection in West Africa, this could be quite promising.

Tourism operators have stressed existing communication activities, which could support local communities in coping with and adapting to future climate impacts, such as EDE and sea turtle conservation programs. Communication seems to play a crucial role in fostering behavioural change through sensitization of the general public. Respondents frequently stressed that a new approach was needed to strengthen coastal communities, which should include both the implementation of adaptive activities and sensitization. However, this needs to be strategically planned to leverage ecotourism in the Tourism Development Area 1. The main obstacles in the way of successful sustainability communication and climate change education are the relatively low numbers of tourists visiting Kartong and Tanji, under-trained staff and limited business and marketing skills among the tourism operators. In addition, the analysis revealed a lack of well-established professional networks. Tourists' contributions to coastal conservation are very limited in both study areas. This means that ecotourism, especially in Tanji Bird Reserve, seems to be purely nature-based, and tourists are only concerned with enjoying nature and related wildlife without a keen interest in supporting sustainable practices or conservation schemes. Finally, the study underlined the poor visitor management system in Tanji Bird Reserve as a further obstacle, with a reactive approach in specialized products like bird watching.

Strategically-planned and/or lifelong communication in general tends to be given less attention while designing ecotourism or climate change adaptation projects and/or activities. The paper has showcased some good practices of sustainability communication and their positive effects on coastal ecotourism and related-resources in the Gambia, especially the effects of approaching sustainability and climate change together on rural livelihoods and communities (EDE, 2015). This may help to ensure the resilience of coastal ecotourism and communities in the face of climate change, and thus help to enhance adaptation forces in The Gambia. Nevertheless, one should not overlook the political, cultural and economic constraints that limit the actions of tourism providers. Therefore, a well strategically-planned sustainability communication needs to be tailored to locally available resources and constraints (e.g social norms). The important thing is to find creative ways of engaging the private and public sector as well as communities and youth on a win-win basis as in the case of the 2015 EDE in the Gambia.

8 Acknowledgement

The study was conducted for the West African Science Service Centre on Climate Change and Adapted Land Use (www.wascal.org) and funded by the German Federal Ministry of Education and Research. We would like to thank Fatou Beyai Raji and the ZEF Working Paper editors Eva Youkhana and Till Stellmacher for their advice on an earlier version of this paper. We also thank Musa Sowe, Dawda Badgie, Abdoulie Sawo, Abubaccar Kujabi, Geri Mitchell and all the tourist operators who supported this research. However, full responsibility for the content is taken by the authors.

9 References

- Bahi Aghi (2006). Elaboration des messages en communication pour la santé et la problématique du changement de comportement ; contribution au Colloque international réuni a Douala (Cameroun) en avril 2006 « Communication et changement social en Afrique et dans les Caraïbes : bilan et perspectives.
- Carney, J., Gillespie, T. W., and Rosomoff, R. (2014). Assessing forest change in a priority West African mangrove ecosystem: 1986–2010. *Geoforum* 53: 126–135.
- Crow, B., and Carney J. (2013). Commercializing nature. Mangrove conservation and female oyster collectors in the Gambia. *Antipode* 45(2): 275–293.
- Erwin, L. (2009). Wetland and global climate change. Wetlands Ecology and Management 17: 71-84.
- Fennell, D. A. (2015). *Ecotourism*. London/New York: Routledge.
- GoG. (2007). *National Adaptation Plan of Action* (NAPA). Banjul. http://unfccc.int/resource/docs/napa/gmb01.pdf
- GoG/Department of State for Tourism and Culture. (2006). *Tourism Development Master Plan*. Banjul, The Gambia: Author. PDF file received from Abdoulie Sawo (DPWM) in March 2015.
- GoG/ DPWM. (2013). *The National Parks and Wildlife Policy of the Gambia*. Draft paper. Banjul: Author.
- GoG/DPWM. (2014). Visitors Database to Protected Areas Report (Dec 2013 Jan 2014) for TWNP, BWR, TBR, KWNP & ANR. Banjul: Author.
- Gog/NEA (2011). *The Gambia Environmental Education and Communication Strategy*. Printed version; Banjul.
- Honey, M. (2008). *Ecotourism and Sustainable Development: Who owns the paradise?* Washington: Island Press.
- Jallow, B. P., Barrow, M. K. A., and Leatherman, S. P. (1996). Vulnerability of the coastal zone of the Gambia to sea level rise and development of response strategies and adaptation options. *Climate Research* 6: 165–177.
- KART. (2005). Kartong's Responsible Tourism Policy. Kartong, The Gambia.
- Lossau Annette & Gingsong Li (Eds., 2011). *Sourcebook on sustainable agrobiodiversity management*; Beijing: Social sciences Academic Press.
- Moser, S. C. (2010). Communicating climate change: history, challenges, process and future directions. *Wiley Interdisciplinary Reviews*: Climate Change, 1(1), 31–53.
- Newig, J. (2011). Climate change as element of sustainability communication. In Godemann & Michelson (Eds.). *Sustainability communication: Interdisciplinary Perspectives and Theoretical Foundations*. Netherlands: Springer.

- Newig, J., Schultz, D., Fischer, D., Hetze, K., Laws, N. And Ludecke, G., and Rieckmann, M. (2013). Communication regarding sustainability: Conceptual perspectives and exploration of societal subsystems. *Sustainability* 5: 2976–2990. www.mdi.com/journal/sustainability.
- Mucchielli, A. (2001). Les sciences de l'information et de la communication (Information and Communication Sciences), 3rd edition, Paris: Hachette.
- Reddy, M. V. & Wilkes K. (Eds) (2013). *Tourism, Climate Change and Sustainability*. London/New York: Routledge.
- Schipper, E. and Burton, I. (2009). *The Earthscan Reader on Adaptation to Climate Change*. London: Earthscan.
- United Nations-World Trade Organization. (n.d). *Tourism value chain analysis in Kartong and Tumani Tenda (feedback). Collaborative Action for Sustainable Tourism (COAST) Project 2010–2014*, The Gambia.
- Van der Linden, S. (2014). Towards a new model for communicating climate change. In S. Cohen, J. Higham, P. Peters and S. Gossling (Eds.) *Understanding and governing sustainable tourism mobility: psychological and behavioural approaches* (pp. 243-275). Routledge: Taylor and Francis Group.
- Wanga, O. J. (2013). The Nexus between environmental knowledge and ecotourism attitude among the local youths on Co-educational Secondary Schools in Bondo Sub-County, Siaya County. *International Journal of Business and Social Research* 3.7: 103–116.
- Weaver, D., & Lawton, L. J. (2007). Twenty years on: The state of contemporary ecotourism research. *Tourism Management* 28: 1168–1179.

ZEF Working Paper Series, ISSN 1864-6638

Center for Development Research, University of Bonn

Editors: Christian Borgemeister, Joachim von Braun, Manfred Denich, Till Stellmacher and Eva Youkhana

- **1.** Evers, Hans-Dieter and Solvay Gerke (2005). Closing the Digital Divide: Southeast Asia's Path Towards a Knowledge Society.
- **2.** Bhuiyan, Shajahan and Hans-Dieter Evers (2005). Social Capital and Sustainable Development: Theories and Concepts.
- 3. Schetter, Conrad (2005). Ethnicity and the Political Reconstruction of Afghanistan.
- 4. Kassahun, Samson (2005). Social Capital and Community Efficacy. In Poor Localities of Addis Ababa Ethiopia.
- **5.** Fuest, Veronika (2005). Policies, Practices and Outcomes of Demand-oriented Community Water Supply in Ghana: The National Community Water and Sanitation Programme 1994 2004.
- **6.** Menkhoff, Thomas and Hans-Dieter Evers (2005). Strategic Groups in a Knowledge Society: Knowledge Elites as Drivers of Biotechnology Development in Singapore.
- **7.** Mollinga, Peter P. (2005). The Water Resources Policy Process in India: Centralisation, Polarisation and New Demands on Governance.
- **8.** Evers, Hans-Dieter (2005). Wissen ist Macht: Experten als Strategische Gruppe.
- 8.a Evers, Hans-Dieter and Solvay Gerke (2005). Knowledge is Power: Experts as Strategic Group.
- **9.** Fuest, Veronika (2005). Partnerschaft, Patronage oder Paternalismus? Eine empirische Analyse der Praxis universitärer Forschungskooperation mit Entwicklungsländern.
- 10. Laube, Wolfram (2005). Promise and Perils of Water Reform: Perspectives from Northern Ghana.
- **11.** Mollinga, Peter P. (2004). Sleeping with the Enemy: Dichotomies and Polarisation in Indian Policy Debates on the Environmental and Social Effects of Irrigation.
- 12. Wall, Caleb (2006). Knowledge for Development: Local and External Knowledge in Development Research.
- **13.** Laube, Wolfram and Eva Youkhana (2006). Cultural, Socio-Economic and Political Con-straints for Virtual Water Trade: Perspectives from the Volta Basin, West Africa.
- 14. Hornidge, Anna-Katharina (2006). Singapore: The Knowledge-Hub in the Straits of Malacca.
- 15. Evers, Hans-Dieter and Caleb Wall (2006). Knowledge Loss: Managing Local Knowledge in Rural Uzbekistan.
- **16.** Youkhana, Eva; Lautze, J. and B. Barry (2006). Changing Interfaces in Volta Basin Water Management: Customary, National and Transboundary.
- **17.** Evers, Hans-Dieter and Solvay Gerke (2006). The Strategic Importance of the Straits of Malacca for World Trade and Regional Development.
- **18.** Hornidge, Anna-Katharina (2006). Defining Knowledge in Germany and Singapore: Do the Country-Specific Definitions of Knowledge Converge?
- **19.** Mollinga, Peter M. (2007). Water Policy Water Politics: Social Engineering and Strategic Action in Water Sector Reform.
- 20. Evers, Hans-Dieter and Anna-Katharina Hornidge (2007). Knowledge Hubs Along the Straits of Malacca.
- **21.** Sultana, Nayeem (2007). Trans-National Identities, Modes of Networking and Integration in a Multi-Cultural Society. A Study of Migrant Bangladeshis in Peninsular Malaysia.
- **22.** Yalcin, Resul and Peter M. Mollinga (2007). Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The Creation of a New Bureaucracy.
- **23.** Menkhoff, T.; Loh, P. H. M.; Chua, S. B.; Evers, H.-D. and Chay Yue Wah (2007). Riau Vegetables for Singapore Consumers: A Collaborative Knowledge-Transfer Project Across the Straits of Malacca.
- 24. Evers, Hans-Dieter and Solvay Gerke (2007). Social and Cultural Dimensions of Market Expansion.
- **25.** Obeng, G. Y.; Evers, H.-D.; Akuffo, F. O., Braimah, I. and A. Brew-Hammond (2007). Solar PV Rural Electrification and Energy-Poverty Assessment in Ghana: A Principal Component Analysis.

- **26.** Eguavoen, Irit; E. Youkhana (2008). Small Towns Face Big Challenge. The Management of Piped Systems after the Water Sector Reform in Ghana.
- **27.** Evers, Hans-Dieter (2008). Knowledge Hubs and Knowledge Clusters: Designing a Knowledge Architecture for Development
- **28.** Ampomah, Ben Y.; Adjei, B. and E. Youkhana (2008). The Transboundary Water Resources Management Regime of the Volta Basin.
- **29.** Saravanan.V.S.; McDonald, Geoffrey T. and Peter P. Mollinga (2008). Critical Review of Integrated Water Resources Management: Moving Beyond Polarised Discourse.
- **30.** Laube, Wolfram; Awo, Martha and Benjamin Schraven (2008). Erratic Rains and Erratic Markets: Environmental change, economic globalisation and the expansion of shallow groundwater irrigation in West Africa.
- 31. Mollinga, Peter P. (2008). For a Political Sociology of Water Resources Management.
- 32. Hauck, Jennifer; Youkhana, Eva (2008). Histories of water and fisheries management in Northern Ghana.
- **33.** Mollinga, Peter P. (2008). The Rational Organisation of Dissent. Boundary concepts, boundary objects and boundary settings in the interdisciplinary study of natural resources management.
- 34. Evers, Hans-Dieter; Gerke, Solvay (2009). Strategic Group Analysis.
- **35.** Evers, Hans-Dieter; Benedikter, Simon (2009). Strategic Group Formation in the Mekong Delta The Development of a Modern Hydraulic Society.
- **36.** Obeng, George Yaw; Evers, Hans-Dieter (2009). Solar PV Rural Electrification and Energy-Poverty: A Review and Conceptual Framework With Reference to Ghana.
- **37.** Scholtes, Fabian (2009). Analysing and explaining power in a capability perspective.
- 38. Eguavoen, Irit (2009). The Acquisition of Water Storage Facilities in the Abay River Basin, Ethiopia.
- **39.** Hornidge, Anna-Katharina; Mehmood UI Hassan; Mollinga, Peter P. (2009). 'Follow the Innovation' A joint experimentation and learning approach to transdisciplinary innovation research.
- **40.** Scholtes, Fabian (2009). How does moral knowledge matter in development practice, and how can it be researched?
- **41.** Laube, Wolfram (2009). Creative Bureaucracy: Balancing power in irrigation administration in northern Ghana.
- **42.** Laube, Wolfram (2009). Changing the Course of History? Implementing water reforms in Ghana and South Africa.
- **43.** Scholtes, Fabian (2009). Status quo and prospects of smallholders in the Brazilian sugarcane and ethanol sector: Lessons for development and poverty reduction.
- **44.** Evers, Hans-Dieter; Genschick, Sven; Schraven, Benjamin (2009). Constructing Epistemic Landscapes: Methods of GIS-Based Mapping.
- **45.** Saravanan V.S. (2009). Integration of Policies in Framing Water Management Problem: Analysing Policy Processes using a Bayesian Network.
- **46.** Saravanan V.S. (2009). Dancing to the Tune of Democracy: Agents Negotiating Power to Decentralise Water Management.
- **47.** Huu, Pham Cong; Rhlers, Eckart; Saravanan, V. Subramanian (2009). Dyke System Planing: Theory and Practice in Can Tho City, Vietnam.
- **48.** Evers, Hans-Dieter; Bauer, Tatjana (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta.
- **49.** Reis, Nadine; Mollinga, Peter P. (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy implementation between the needs for clean water and 'beautiful latrines'.
- **50.** Gerke, Solvay; Ehlert, Judith (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam

- **51.** Schraven, Benjamin; Eguavoen, Irit; Manske, Günther (2009). Doctoral degrees for capacity development: Results from a survey among African BiGS-DR alumni.
- **52.** Nguyen, Loan (2010). Legal Framework of the Water Sector in Vietnam.
- **53.** Nguyen, Loan (2010). Problems of Law Enforcement in Vietnam. The Case of Wastewater Management in Can Tho City.
- **54.** Oberkircher, Lisa et al. (2010). Rethinking Water Management in Khorezm, Uzbekistan. Concepts and Recommendations.
- **55.** Waibel, Gabi (2010). State Management in Transition: Understanding Water Resources Management in Vietnam.
- **56.** Saravanan V.S.; Mollinga, Peter P. (2010). Water Pollution and Human Health. Transdisciplinary Research on Risk Governance in a Complex Society.
- **57.** Vormoor, Klaus (2010). Water Engineering, Agricultural Development and Socio-Economic Trends in the Mekong Delta, Vietnam.
- **58.** Hornidge, Anna-Katharina; Kurfürst, Sandra (2010). Envisioning the Future, Conceptualising Public Space. Hanoi and Singapore Negotiating Spaces for Negotiation.
- **59.** Mollinga, Peter P. (2010). Transdisciplinary Method for Water Pollution and Human Health Research.
- **60.** Youkhana, Eva (2010). Gender and the development of handicraft production in rural Yucatán/Mexico.
- **61.** Naz, Farhat; Saravanan V. Subramanian (2010). Water Management across Space and Time in India.
- **62.** Evers, Hans-Dieter; Nordin, Ramli, Nienkemoer, Pamela (2010). Knowledge Cluster Formation in Peninsular Malaysia: The Emergence of an Epistemic Landscape.
- **63.** Mehmood UI Hassan; Hornidge, Anna-Katharina (2010). 'Follow the Innovation' The second year of a joint experimentation and learning approach to transdisciplinary research in Uzbekistan.
- **64.** Mollinga, Peter P. (2010). Boundary concepts for interdisciplinary analysis of irrigation water management in South Asia.
- **65.** Noelle-Karimi, Christine (2006). Village Institutions in the Perception of National and International Actors in Afghanistan. (**Amu Darya Project Working Paper No. 1**)
- **66.** Kuzmits, Bernd (2006). Cross-bordering Water Management in Central Asia. (**Amu Darya Project Working Paper No. 2**)
- **67.** Schetter, Conrad; Glassner, Rainer; Karokhail, Masood (2006). Understanding Local Violence. Security Arrangements in Kandahar, Kunduz and Paktia. (**Amu Darya Project Working Paper No. 3**)
- **68.** Shah, Usman (2007). Livelihoods in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. (**Amu Darya Project Working Paper No. 4**)
- **69.** ter Steege, Bernie (2007). Infrastructure and Water Distribution in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. (**Amu Darya Project Working Paper No. 5**)
- **70.** Mielke, Katja (2007). On The Concept of 'Village' in Northeastern Afghanistan. Explorations from Kunduz Province. (**Amu Darya Project Working Paper No. 6**)
- **71.** Mielke, Katja; Glassner, Rainer; Schetter, Conrad; Yarash, Nasratullah (2007). Local Governance in Warsaj and Farkhar Districts. (**Amu Darya Project Working Paper No. 7**)
- 72. Meininghaus, Esther (2007). Legal Pluralism in Afghanistan. (Amu Darya Project Working Paper No. 8)
- **73.** Yarash, Nasratullah; Smith, Paul; Mielke, Katja (2010). The fuel economy of mountain villages in Ishkamish and Burka (Northeast Afghanistan). Rural subsistence and urban marketing patterns. (**Amu Darya Project Working Paper No. 9**)
- **74.** Oberkircher, Lisa (2011). 'Stay We Will Serve You Plov!'. Puzzles and pitfalls of water research in rural Uzbekistan.
- **75.** Shtaltovna, Anastasiya; Hornidge, Anna-Katharina; Mollinga, Peter P. (2011). The Reinvention of Agricultural Service Organisations in Uzbekistan a Machine-Tractor Park in the Khorezm Region.

- **76.** Stellmacher, Till; Grote, Ulrike (2011). Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane?
- **77.** Gatzweiler, Franz W.; Baumüller, Heike; Ladenburger, Christine; von Braun, Joachim (2011). Marginality. Addressing the roots causes of extreme poverty.
- **78.** Mielke, Katja; Schetter, Conrad; Wilde, Andreas (2011). Dimensions of Social Order: Empirical Fact, Analytical Framework and Boundary Concept.
- **79.** Yarash, Nasratullah; Mielke, Katja (2011). The Social Order of the Bazaar: Socio-economic embedding of Retail and Trade in Kunduz and Imam Sahib
- **80.** Baumüller, Heike; Ladenburger, Christine; von Braun, Joachim (2011). Innovative business approaches for the reduction of extreme poverty and marginality?
- 81. Ziai, Aram (2011). Some reflections on the concept of 'development'.
- 82. Saravanan V.S., Mollinga, Peter P. (2011). The Environment and Human Health An Agenda for Research.
- **83.** Eguavoen, Irit; Tesfai, Weyni (2011). Rebuilding livelihoods after dam-induced relocation in Koga, Blue Nile basin, Ethiopia.
- **84.** Eguavoen, I., Sisay Demeku Derib et al. (2011). Digging, damming or diverting? Small-scale irrigation in the Blue Nile basin, Ethiopia.
- **85.** Genschick, Sven (2011). Pangasius at risk Governance in farming and processing, and the role of different capital.
- **86.** Quy-Hanh Nguyen, Hans-Dieter Evers (2011). Farmers as knowledge brokers: Analysing three cases from Vietnam's Mekong Delta.
- **87.** Poos, Wolf Henrik (2011). The local governance of social security in rural Surkhondarya, Uzbekistan. Post-Soviet community, state and social order.
- **88.** Graw, Valerie; Ladenburger, Christine (2012). Mapping Marginality Hotspots. Geographical Targeting for Poverty Reduction.
- 89. Gerke, Solvay; Evers, Hans-Dieter (2012). Looking East, looking West: Penang as a Knowledge Hub.
- **90.** Turaeva, Rano (2012). Innovation policies in Uzbekistan: Path taken by ZEFa project on innovations in the sphere of agriculture.
- **91.** Gleisberg-Gerber, Katrin (2012). Livelihoods and land management in the loba Province in south-western Burkina Faso.
- **92.** Hiemenz, Ulrich (2012). The Politics of the Fight Against Food Price Volatility Where do we stand and where are we heading?
- **93.** Baumüller, Heike (2012). Facilitating agricultural technology adoption among the poor: The role of service delivery through mobile phones.
- **94.** Akpabio, Emmanuel M.; Saravanan V.S. (2012). Water Supply and Sanitation Practices in Nigeria: Applying Local Ecological Knowledge to Understand Complexity.
- 95. Evers, Hans-Dieter; Nordin, Ramli (2012). The Symbolic Universe of Cyberjaya, Malaysia.
- **96.** Akpabio, Emmanuel M. (2012). Water Supply and Sanitation Services Sector in Nigeria: The Policy Trend and Practice Constraints.
- **97.** Boboyorov, Hafiz (2012). Masters and Networks of Knowledge Production and Transfer in the Cotton Sector of Southern Tajikistan.
- **98.** Van Assche, Kristof; Hornidge, Anna-Katharina (2012). Knowledge in rural transitions formal and informal underpinnings of land governance in Khorezm.
- 99. Eguavoen, Irit (2012). Blessing and destruction. Climate change and trajectories of blame in Northern Ghana.
- **100.** Callo-Concha, Daniel; Gaiser, Thomas and Ewert, Frank (2012). Farming and cropping systems in the West African Sudanian Savanna. WASCAL research area: Northern Ghana, Southwest Burkina Faso and Northern Benin.

- **101.** Sow, Papa (2012). Uncertainties and conflicting environmental adaptation strategies in the region of the Pink Lake, Senegal.
- **102.** Tan, Siwei (2012). Reconsidering the Vietnamese development vision of "industrialisation and modernisation by 2020".
- 103. Ziai, Aram (2012). Postcolonial perspectives on 'development'.
- **104.** Kelboro, Girma; Stellmacher, Till (2012). Contesting the National Park theorem? Governance and land use in Nech Sar National Park, Ethiopia.
- **105.** Kotsila, Panagiota (2012). "Health is gold": Institutional structures and the realities of health access in the Mekong Delta, Vietnam.
- **106.** Mandler, Andreas (2013). Knowledge and Governance Arrangements in Agricultural Production: Negotiating Access to Arable Land in Zarafshan Valley, Tajikistan.
- **107.** Tsegai, Daniel; McBain, Florence; Tischbein, Bernhard (2013). Water, sanitation and hygiene: the missing link with agriculture.
- **108.** Pangaribowo, Evita Hanie; Gerber, Nicolas; Torero, Maximo (2013). Food and Nutrition Security Indicators: A Review.
- **109.** von Braun, Joachim; Gerber, Nicolas; Mirzabaev, Alisher; Nkonya Ephraim (2013). The Economics of Land Degradation.
- **110.** Stellmacher, Till (2013). Local forest governance in Ethiopia: Between legal pluralism and livelihood realities.
- **111.** Evers, Hans-Dieter; Purwaningrum, Farah (2013). Japanese Automobile Conglomerates in Indonesia: Knowledge Transfer within an Industrial Cluster in the Jakarta Metropolitan Area.
- **112.** Waibel, Gabi; Benedikter, Simon (2013). The formation water user groups in a nexus of central directives and local administration in the Mekong Delta, Vietnam.
- **113.** Ayaribilla Akudugu, Jonas; Laube, Wolfram (2013). Implementing Local Economic Development in Ghana: Multiple Actors and Rationalities.
- **114.** Malek, Mohammad Abdul; Hossain, Md. Amzad; Saha, Ratnajit; Gatzweiler, Franz W. (2013). Mapping marginality hotspots and agricultural potentials in Bangladesh.
- **115.** Siriwardane, Rapti; Winands, Sarah (2013). Between hope and hype: Traditional knowledge(s) held by marginal communities.
- 116. Nguyen, Thi Phuong Loan (2013). The Legal Framework of Vietnam's Water Sector: Update 2013.
- **117.** Shtaltovna, Anastasiya (2013). Knowledge gaps and rural development in Tajikistan. Agricultural advisory services as a panacea?
- **118.** Van Assche, Kristof; Hornidge, Anna-Katharina; Shtaltovna, Anastasiya; Boboyorov, Hafiz (2013). Epistemic cultures, knowledge cultures and the transition of agricultural expertise. Rural development in Tajikistan, Uzbekistan and Georgia.
- **119.** Schädler, Manuel; Gatzweiler, Franz W. (2013). Institutional Environments for Enabling Agricultural Technology Innovations: The role of Land Rights in Ethiopia, Ghana, India and Bangladesh.
- **120.** Eguavoen, Irit; Schulz, Karsten; de Wit, Sara; Weisser, Florian; Müller-Mahn, Detlef (2013). Political dimensions of climate change adaptation. Conceptual reflections and African examples.
- **121.** Feuer, Hart Nadav; Hornidge, Anna-Katharina; Schetter, Conrad (2013). Rebuilding Knowledge. Opportunities and risks for higher education in post-conflict regions.
- **122.** Dörendahl, Esther I. (2013). Boundary work and water resources. Towards improved management and research practice?
- 123. Baumüller, Heike (2013). Mobile Technology Trends and their Potential for Agricultural Development
- **124.** Saravanan, V.S. (2013). "Blame it on the community, immunize the state and the international agencies." An assessment of water supply and sanitation programs in India.

- **125.** Ariff, Syamimi; Evers, Hans-Dieter; Ndah, Anthony Banyouko; Purwaningrum, Farah (2014). Governing Knowledge for Development: Knowledge Clusters in Brunei Darussalam and Malaysia.
- 126. Bao, Chao; Jia, Lili (2014). Residential fresh water demand in China. A panel data analysis.
- **127.** Siriwardane, Rapti (2014). War, Migration and Modernity: The Micro-politics of the Hijab in Northeastern Sri Lanka.
- 128. Kirui, Oliver Kiptoo; Mirzabaev, Alisher (2014). Economics of Land Degradation in Eastern Africa.
- 129. Evers, Hans-Dieter (2014). Governing Maritime Space: The South China Sea as a Mediterranean Cultural Area.
- **130.** Saravanan, V. S.; Mavalankar, D.; Kulkarni, S.; Nussbaum, S.; Weigelt, M. (2014). Metabolized-water breeding diseases in urban India: Socio-spatiality of water problems and health burden in Ahmedabad.
- **131.** Zulfiqar, Ali; Mujeri, Mustafa K.; Badrun Nessa, Ahmed (2014). Extreme Poverty and Marginality in Bangladesh: Review of Extreme Poverty Focused Innovative Programmes.
- **132.** Schwachula, Anna; Vila Seoane, Maximiliano; Hornidge, Anna-Katharina (2014). Science, technology and innovation in the context of development. An overview of concepts and corresponding policies recommended by international organizations.
- **133.** Callo-Concha, Daniel (2014). Approaches to managing disturbance and change: Resilience, vulnerability and adaptability.
- **134.** Mc Bain, Florence (2014). Health insurance and health environment: India's subsidized health insurance in a context of limited water and sanitation services.
- **135.** Mirzabaev, Alisher; Guta, Dawit; Goedecke, Jann; Gaur, Varun; Börner, Jan; Virchow, Detlef; Denich, Manfred; von Braun, Joachim (2014). Bioenergy, Food Security and Poverty Reduction: Mitigating tradeoffs and promoting synergies along the Water-Energy-Food Security Nexus.
- **136.** Iskandar, Deden Dinar; Gatzweiler, Franz (2014). An optimization model for technology adoption of marginalized smallholders: Theoretical support for matching technological and institutional innovations.
- **137.** Bühler, Dorothee; Grote, Ulrike; Hartje, Rebecca; Ker, Bopha; Lam, Do Truong; Nguyen, Loc Duc; Nguyen, Trung Thanh; Tong, Kimsun (2015). Rural Livelihood Strategies in Cambodia: Evidence from a household survey in Stung Treng.
- **138.** Amankwah, Kwadwo; Shtaltovna, Anastasiya; Kelboro, Girma; Hornidge, Anna-Katharina (2015). A Critical Review of the Follow-the-Innovation Approach: Stakeholder collaboration and agricultural innovation development.
- **139.** Wiesmann, Doris; Biesalski, Hans Konrad; von Grebmer, Klaus; Bernstein, Jill (2015). Methodological review and revision of the Global Hunger Index.
- **140.** Eguavoen, Irit; Wahren, Julia (2015). Climate change adaptation in Burkina Faso: aid dependency and obstacles to political participation. Adaptation au changement climatique au Burkina Faso: la dépendance à l'aide et les obstacles à la participation politique.
- 141. Youkhana, Eva. Postponed to 2016 (147).
- **142.** Von Braun, Joachim; Kalkuhl, Matthias (2015). International Science and Policy Interaction for Improved Food and Nutrition Security: toward an International Panel on Food and Nutrition (IPFN).
- **143.** Mohr, Anna; Beuchelt, Tina; Schneider, Rafaël; Virchow, Detlef (2015). A rights-based food security principle for biomass sustainability standards and certification systems.
- **144.** Husmann, Christine; von Braun, Joachim; Badiane, Ousmane; Akinbamijo, Yemi; Fatunbi, Oluwole Abiodun; Virchow, Detlef (2015). Tapping Potentials of Innovation for Food Security and Sustainable Agricultural Growth: An Africa-Wide Perspective.
- **145.** Laube, Wolfram (2015). Changing Aspirations, Cultural Models of Success, and Social Mobility in Northern Ghana.
- 146. Narayanan, Sudha; Gerber, Nicolas (2016). Social Safety Nets for Food and Nutritional Security in India.

- **147.** Youkhana, Eva (2016). Migrants' religious spaces and the power of Christian Saints the Latin American Virgin of Cisne in Spain.
- **148.** Grote, Ulrike; Neubacher, Frank (2016). Rural Crime in Developing Countries: Theoretical Framework, Empirical Findings, Research Needs.
- **149.** Sharma, Rasadhika; Nguyen, Thanh Tung; Grote, Ulrike; Nguyen, Trung Thanh. Changing Livelihoods in Rural Cambodia: Evidence from panel household data in Stung Treng.
- **150.** Kavegue, Afi; Eguavoen, Irit (2016). The experience and impact of urban floods and pollution in Ebo Town, Greater Banjul Area, in The Gambia.
- 151. Mbaye, Linguère Mously; Zimmermann, Klaus F. (2016). Natural Disasters and Human Mobility.
- **152.** Gulati, Ashok; Manchanda, Stuti; Kacker, Rakesh (2016). Harvesting Solar Power in India.
- **153.** Laube, Wolfram; Awo, Martha; Derbile, Emmanuel (2017). Smallholder Integration into the Global Shea Nut Commodity Chain in Northern Ghana. Promoting poverty reduction or continuing exploitation?
- **154.** Attemene, Pauline; Eguavoen, Irit (2017). Effects of sustainability communication on environments and rural livelihoods.

http://www.zef.de/workingpapers.html

ZEF Development Studies

edited by Solvay Gerke and Hans-Dieter Evers

Center for Development Research (ZEF), University of Bonn

Shahjahan H. Bhuiyan Benefits of Social Capital. Urban Solid Waste Management in Bangladesh Vol. 1, 2005, 288 p., 19.90 EUR, br. ISBN 3-8258-8382-5

Veronika Fuest

Demand-oriented Community Water Supply in Ghana. Policies, Practices and Outcomes Vol. 2, 2006, 160 p., 19.90 EUR, br. ISBN 3-8258-9669-2

Anna-Katharina Hornidge Knowledge Society. Vision and Social Construction of Reality in Germany and Singapore Vol. 3, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Wolfram Laube

Changing Natural Resource Regimes in Northern Ghana. Actors, Structures and Institutions Vol. 4, 2007, 392 p., 34.90 EUR, br. ISBN 978-3-8258-0641-5

Lirong Liu

Wirtschaftliche Freiheit und Wachstum. Eine international vergleichende Studie Vol. 5, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Phuc Xuan To

Forest Property in the Vietnamese Uplands. An Ethnography of Forest Relations in Three Dao Villages
Vol. 6, 2007, 296 p., 29,90 FUR, br. ISBN 978-

Vol. 6, 2007, 296 p., 29.90 EUR, br. ISBN 978-3-8258-0773-3

Caleb R.L. Wall, Peter P. Mollinga (Eds.)
Fieldwork in Difficult Environments.
Methodology as Boundary Work in
Development Research
Vol. 7, 2008, 192 p., 19.90 EUR, br. ISBN 978-3-8258-1383-3

Solvay Gerke, Hans-Dieter Evers, Anna-K. Hornidge (Eds.) The Straits of Malacca. Knowledge and Diversity Vol. 8, 2008, 240 p., 29.90 EUR, br. ISBN 978-3-8258-1383-3

Caleb Wall

Argorods of Western Uzbekistan. Knowledge Control and Agriculture in Khorezm Vol. 9, 2008, 384 p., 29.90 EUR, br. ISBN 978-3-8258-1426-7

Irit Eguavoen

The Political Ecology of Household Water in Northern Ghana Vol. 10, 2008, 328 p., 34.90 EUR, br. ISBN 978-3-8258-1613-1

Charlotte van der Schaaf
Institutional Change and Irrigation
Management in Burkina Faso. Flowing
Structures and Concrete Struggles
Vol. 11, 2009, 344 p., 34.90 EUR, br. ISBN 978-3-8258-1624-7

Nayeem Sultana

The Bangladeshi Diaspora in Peninsular Malaysia. Organizational Structure, Survival Strategies and Networks Vol. 12, 2009, 368 p., 34.90 EUR, br. ISBN 978-3-8258-1629-2

Peter P. Mollinga, Anjali Bhat, Saravanan V.S. (Eds.)

When Policy Meets Reality. Political Dynamics and the Practice of Integration in Water Resources Management Reform Vol. 13, 2010, 216 p., 29.90 EUR, br., ISBN 978-3-643-10672-8 Irit Eguavoen, Wolfram Laube (Eds.)
Negotiating Local Governance. Natural
Resources Management at the Interface of
Communities and the State
Vol. 14, 2010, 248 p., 29.90 EUR, br., ISBN
978-3-643-10673-5

William Tsuma

Gold Mining in Ghana. Actors, Alliances and Power

Vol. 15, 2010, 256 p., 29.90 EUR, br., ISBN 978-3-643-10811-1

Thim Ly

Planning the Lower Mekong Basin: Social Intervention in the Se San River Vol. 16, 2010, 240 p., 29.90 EUR, br., ISBN 978-3-643-10834-0

Tatjana Bauer

The Challenge of Knowledge Sharing - Practices of the Vietnamese Science Community in Ho Chi Minh City and the Mekong Delta Vol. 17, 2011, 304 p., 29.90 EUR, br., ISBN 978-3-643-90121-7

Pham Cong Huu

Floods and Farmers - Politics, Economics and Environmental Impacts of Dyke Construction in the Mekong Delta / Vietnam Vol. 18, 2012, 200 p., 29.90 EUR, br., ISBN 978-3-643-90167-5

Judith Ehlert

Beautiful Floods - Environmental Knowledge and Agrarian Change in the Mekong Delta, Vietnam Vol. 19, 2012, 256 S., 29,90 EUR, br, ISBN 978-3-643-90195-8

Nadine Reis

Tracing and Making the State - Policy practices and domestic water supply in the Mekong Delta, Vietnam

Vol. 20, 2012, 272 S., 29.90 EUR, br., ISBN 978-3-643-90196-5

Martha A. Awo

Marketing and Market Queens - A study of tomato farmers in the Upper East region of Ghana

Vol. 21, 2012, 192 S., 29.90 EUR, br., ISBN 978-3-643-90234-4

Asghar Tahmasebi

Pastoral Vulnerability to Socio-political and Climate Stresses - The Shahsevan of North Iran Vol. 22, 2013, 192 S., 29.90 EUR, br., ISBN 978-3-643-90357-0

Anastasiya Shtaltovna

Servicing Transformation - Agricultural Service Organisations and Agrarian Change in Post-Soviet Uzbekistan Vol. 23, 2013, 216 S., 29.90 EUR, br., ISBN 978-3-643-90358-7

Hafiz Boboyorov

Collective Identities and Patronage Networks in Southern Tajikistan Vol. 24, 2013, 304 S., 34.90 EUR, br., ISBN 978-3-643-90382-2

Simon Benedikter

The Vietnamese Hydrocracy and the Mekong Delta. Water Resources Development from State Socialism to Bureaucratic Capitalism Vol. 25, 2014, 330 S., 39.90 EUR, br., ISBN 978-3-643-90437-9

Sven Genschick

Aqua-`culture'. Socio-cultural peculiarities, practical senses, and missing sustainability in Pangasius aquaculture in the Mekong Delta, Vietnam.

Vol. 26, 2014, 262 S., 29.90 EUR, br., ISBN 978-3-643-90485-0

Farah Purwaningrum

Knowledge Governance in an Industrial Cluster. The Collaboration between Academia-Industry-Government in Indonesia. Vol. 27, 2014, 296 S., 39.90 EUR, br., ISBN 978-3-643-90508-6 Panagiota Kotsila Socio-political and Cultural Determinants of Diarrheal Disease in the Mekong Delta. From Discourse to Incidence Vol. 28, 2014, 376 S., 39.90 EUR, br., ISBN 978-3-643-90562-8

Huynh Thi Phuong Linh State-Society Interaction in Vietnam. The Everyday Dialogue of Local Irrigation Management in the Mekong Delta Vol. 29, 2016, 304 S., 39.90 EUR, br., ISBN 978-3-643-90719-6

Siwei Tan
Space and Environment in the Industrialising
Mekong Delta.
A socio-spatial analysis of wastewater
management in Vietnam
Vol. 30, 2016, 240 S., 29.90 EUR, br., ISBN 9783-643-90746-2

http://www.lit-verlag.de/reihe/zef



Working Paper Series

Authors: Pauline Attemene and Irit Eguavoen

Contacts: universlettres@yahoo.fr, eguavoen@uni-bonn.de

Photo: Universal Postal Union Gambia

Published by:

Zentrum für Entwicklungsforschung (ZEF) Center for Development Research Walter-Flex-Straße 3

D – 53113 Bonn

Germany

Phone: +49-228-73-1861 Fax: +49-228-73-1869

E-Mail: presse.zef@uni-bonn.de

www.zef.de