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Wolfram Laube, Martha Awo, Emmanuel Derbile

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Authors' addresses

Corresponding author:

Dr. Wolfram Laube
Center for Development Research (ZEF), University of Bonn,
Walter-Flex-Str. 3
53113 Bonn, Germany
Tel. 0049 (0)228-73 4914: Fax 0228-731972
E-mail: wlaube@uni-bonn.de
www.zef.de

Co-authors:

Dr. Martha Awo
Institute of Statistical, Social and Economic Research
University of Ghana
P.O BOX LG 74
Legon, Ghana
E-mail: marthawo@yahoo.com

Dr. Emmanuel Derbile
Faculty of Planning and Land Management
University of Development Studies,
P.O. BOX UPW 3
Wa, Ghana
E-mail: derbile_uds@hotmail.com

Smallholder Integration into the Global Shea Nut Commodity Chain in Northern Ghana

Promoting poverty reduction or continuing exploitation?

Wolfram Laube, Martha Awo and Emmanuel Derbile

Abstract

The integration of African smallholders into global commodity chains is often portrayed as an engine for rural transformation that will generate broad-based economic growth and help to eradicate poverty. In this vein, in northern Ghana, the production of shea nuts, the fruit of the semi-domesticated shea nut tree, which is in high demand in the international confectionary and cosmetic industry, is promoted by government agencies, international donors, non-governmental organizations, and agro-processing companies alike. In their discourses shea nuts become 'women's gold' and the shea industry an engine of poverty reduction. Based on qualitative and quantitative research in the Upper East and Upper West regions of northern Ghana this paper discusses the actual impact and future promises of smallholder integration into the global shea market. The way producers – mainly women from poor rural smallholder households – gain access to nuts and produce and market their crops is described, and the profits derived at different steps of the Ghanaian shea value chain analyzed. The research results show that the sale of shea nuts does provide a welcome source of income for rural women and poor rural households in Northern Ghana at a time of year when resources are scarce. Thus the production and sale of shea nuts helps to mitigate poverty. But the findings also suggest that because of low levels of production, resulting from labor and resource access constraints, as well as exploitative price setting by oligopolistic shea processing companies, the integration into the global shea commodity chain is not a 'game changer' for the producers. It does not have the potential of moving poor rural households out of poverty. This is also reflected in the behavior of rural women who tend to disengage from shea picking when more profitable economic activities such as independent farming, wage labor, or business opportunities arise. Therefore, discourses promoting shea production do not seem to rest on a sober analysis of the socio-economic impact of commodity chain integration, but rather tend to serve political, public relation, and marketing ends.

Keywords: Smallholders, global commodity chains, poverty reduction, shea nuts, Northern Ghana

1 Introduction

The integration of African smallholders into global commodity chains is often portrayed as a panacea for rural transformation and poverty eradication. International donor organizations as well as national governments are thus promoting rural development approaches that promote market-oriented production (World Bank, 2007, 2009). But the increased integration of smallholders into global markets has also negative aspects. Global competition and the removal of trade barriers opens domestic markets to often highly subsidized products of the European, American or Asian industrialized agriculture, deflating domestic prices and squeezing or crowding out local producers (Holmén & Hydén, 2011; Laube, Schraven, & Awo, 2012; Raikes & Gibbon, 2000). In some markets (e.g. fruits, vegetables, cocoa) African smallholders are actually able to compete because of advantageous agro-ecological conditions. But low and fluctuating prices dictated by oligopolistic international agro-processing firms, and strict quality standards imposed by large international import and retail companies, which govern global agricultural commodity chains, are difficult to be met by smallholders (Gereffi, 1994). This context, as well as changing consumer preferences, make investments precarious and can lead to the side-lining of small-scale producers (Amanor, 2011; Dolan & Humphrey, 2000; N. Fold & Gough, 2008; Gibbon & Ponte, 2005). Furthermore, in many “developing” countries the focus on agricultural exports has led to a reduction in the share of farmland devoted to food crops, enhancing the dependency on food imports, the cost of which often outweigh the earnings from agricultural exports and results in agricultural trade deficits (Nin-Pratt, Johnson, & Yu, 2012, p. 29).

In Ghana, market-oriented policies are mirrored in national agricultural policies (Ministry of Food and Agriculture [MOFA], 2007). Following a largely neo-liberal agenda, the idea is to make use of Ghana’s comparative advantages in agriculture, promote agricultural growth based on exports, diversify the country’s export base, and to compete in (emerging) international markets (Ministry of Food and Agriculture [MOFA], 2007, p. 28 ff). Similar policies as well as regional rural development agendas particularly target Ghana’s underdeveloped north (Northern Rural Growth Programme [NRGP], 2007; Savannah Accelerated Development Authority [SADA], 2010). One of the products that are given attention under Ghana’s new export diversification scheme is shea nuts, the fruits of the shea tree (*vitellaria paradoxa*). The shea tree is indigenous to the African Sudan Savannah in a stretch from Senegal to Ethiopia (Mitchell, 2011). Shea trees grow wild and are preserved during landscape clearing on farmland and thus form part of the indigenous farming systems. Its fruits can be eaten and the kernel of its fruits contains high levels of fatty acids. The kernels are locally turned into shea butter and used as cooking oil as well as for a variety of cosmetic, medicinal as well as ritual purposes. Apart from its local uses, shea kernels as well as shea butter have long attracted commercial attention. Shea products have reported to be part of West African and Trans-Saharan trade at least since the 14th century (Masters, Yidana, & Lovett, 2004, p. 46). While the regional trade in shea products collapsed during colonial times, national trade in shea butter in Ghana continued throughout the 20th century. The trade between the interior and the coast was first organized by Gonja traders using Ntrapo and later Ada canoe men, who transported shea butter from the savannah to the coast in the late 19th century and early 20th century (Aniegye, 2012). This somewhat limited trade serving local demand in the coastal areas of the Gold Coast, where shea butter was mainly used for medicinal and ritual purposes, increased when transportation by road became possible during the 1920s and further expanded throughout the colonial period up to date (Sofu, Kpebu, & Belcher, 2007, p. 169 ff). But despite a vivid southern market and recurrent attempts by colonial officers to raise awareness for the economic potential of the shea resources in the Northern Territories of the British Gold Coast colony (Aniegye, 2012, p. 133 ff), the colonial administration rather inhibited than expanded the commercialization of shea products (Songsore & Denkabe, 1995). However, a decline in agricultural output following labor migration, combined with a demand for cash for taxes and for newly available colonial products led to the commercialization of shea butter on local and district markets in northern Ghana during the colonial period (Chalfin, 2004a, pp. 56-57). Only under the import substitution programs in the 1970s the commercial potential of shea nuts started to be developed at a considerable

level and the exports of shea nuts grew (Joseph A. Yaro, 2013, p. 7). From the 1970s up to 1994, when the shea trade was finally liberalized, the trade in shea nuts in Ghana was largely state-controlled involving the Cocoa Marketing Board, the Produce Buying Company (PBC) and state licensed traders as key actors. After liberalization, the shea nut trade was taken over by a number of international as well as local trading companies that started buying shea nuts at local and district level, often recruiting the networks of shea purchasing agents the government had previously created (Chalfin, 1996). Since the mid-1990s international and local companies have developed Ghana's shea industry to a point in which the country has become one of the largest exporters of shea nuts worldwide (Holtzman, 2004, p. 4; Moore, 2008, p. 216). Global industrial demand for shea products for high quality cosmetics and as an ingredient for cocoa butter equivalents (CBEs) in the production of chocolate in confectionary, has been constantly rising (Strauss, 1992) (Richard Truscott (LMC international), 2013).

Historic and current patterns of trade in shea kernel and products have been well documented. It exists a wealth of literature addressing different aspects and historical phases of the development of the trade in shea nuts and shea butter in Ghana and other countries in the (West) African savannah belt (Carette, Malotau, van Leeuwen, & Tolkamp, 2009; Chalfin, 1996, 2004a; Crelerot, 1995; Elias & Carney, 2007; Niels Fold, 2002; Niels Fold & Reenberg, 1999; Lovejoy, 1980; Lovett, 2004; Peil, 1975; Scholz, 2010). Chalfin (2001, 2004a) as well as Fold and Reenberg (1975) shed light on local trading patterns within and in between Ghana and Burkina Faso. They show that there is apparently a bifurcation between local and the global shea markets. Local actors continue to cater for the local shea demand while trying to capture the opportunities offered by global demand. A host of studies addresses shea production in Ghana and the integration of local shea economies into national and global commodity chains. The focus of these studies is very much on trade and the shift in trading patterns after the liberalization of agricultural product markets following the implementation of structural adjustment programs (SAPs) (Carette et al., 2009; Chalfin, 1996; Niels Fold, 2000, 2002, 2004; Scholz, 2010). Furthermore, they show how asymmetric power relations in the global shea value chain run against the interest of local shea producers and allow oligopolistic food processing and cosmetic companies to dictate the terms of trade, as regards both prices and quality of products exported.

Despite this wealth in literature, scientific research addressing the impact of the commercialization of shea nuts on local livelihoods and the distributional aspects of the shea trade is scarce (Chalfin, 2003; Wardell & Fold, 2013). Smallholder integration into global shea commodity chains is often portrayed as a great chance. Econometric studies on the livelihoods of shea producers in Ghana (Hatskevich & Essilfie, 2013; Hatskevich, Jenicek, & Antwi-Darkwah, 2011) paint a very optimistic picture of the potentially transformative and poverty reducing impact of shea commercialization, which is echoed in ecological studies (Moore, 2008; Poudyal, 2011). Similar arguments are common in the public and political discourse in northern Ghana. In the press, the shea sector is portrayed to be "a major poverty alleviator and a catalyst to breach the North-South developmental gap" (Kwode, 2010, p. 3), shea nuts are called "womens' gold" or the "cocoa of the North" and hopes are raised that "small scale shea farmers and producers could become Ghana's newest 'nouveau riche'" (Shore, 1996, p. 1). At the time government agencies such as the Savannah Accelerated Development Authority [SADA], but also development organizations such as the Netherlands Development Organisation [SNV], the United Nations Development Programme [UNDP], the United States Agency for International Development [USAID], the Japan International Cooperation Agency [JICA] and a host of NGOs try to jump on the bandwagon and to promote and upgrade shea production, processing and marketing (Kwode, 2010, p. 2; UNDP, 2011, pp. 36-37). The promotion of global shea commodity chains as a means of rural transformation in Ghana and beyond shows similarities to environmental narratives. Fairhead and Leach (1995, 1996) were able to show how reigning discourses about the human depletion of the West African savannah-forests mosaic, that lacked sufficient scientific basis and misinterpreted actual environmental dynamics, became the driver of forest policies in the region, because of the vested interest of important actors at local, national and international levels. Similarly, the reigning shea discourse fits both the political rationalities of Ghana's government that needs to satisfy the aspirations of its Northern constituencies and the neo-liberal, market- and export-oriented policies of

mainstream development organizations. At the same time, the portrayal of shea butter as a 'natural' African product, the consumption of which helps to ameliorate poverty among rural African women, propels the sale of cosmetic shea products in global cosmopolitan niche markets (Chalfin, 2004a, p. 58 ff). Cosmetic companies as well as local and international NGOs that function as brokers between local producers and customers in the Global North have a vested interest to maintain an overly optimistic discourse of the transformative potential of the shea trade. It is thus unclear in how far the current discourse on the pro-poor impact of shea nut production is based on a sober analysis of facts, or is rather a narrative. Governmental initiatives such as SADA allegedly suffer from their own inefficiencies and governance problems (Brenya, 2013; Gough, Langevang, & Namatovu, 2014; Langevang, 2007), many (international) development initiatives in northern Ghana have also proven to be mal-directed and piece-meal (Botchway, 2001), and some NGOs seem to be run for profit rather than for altruistic reasons (Kwode, 2010). But apart from these pragmatic problems in implementation, the underlying question whether shea nuts have the potential to become more than a "feminized subsidy from nature" (Elias & Carney, 2007) and whether smallholder integration into the global shea value chain is a promise or a peril, remains.

Studies from Burkina Faso (Elias & Carney, 2007) and Benin (Schreckenber, 2004) suggest that shea trade and processing provides a complementary income activity in the diversified livelihood portfolio of rural women, rather than a way out of poverty. The shea trade is important because it provides access to cash during the lean season, when households lack both capital for farming and food stocks. The studies thus imply that the commercialization of the shea nut trade has the potential to mitigate poverty to some degree. At the same time, shea commercialization appears not only to be an economic chance, but also a potentially threatening process that increases the competition for raw material, makes smallholders dependent of potentially volatile and oligopolistic global markets, and could transform gendered access rights to shea trees and control over shea profits to the detriment of women (Boffa, Knudson, Yameogo, & Nikiema, 1996, p. 119; Wardell & Fold, 2013). Furthermore, the sustainability of shea production seems to be threatened in an environment in which bush burning and the indiscriminate felling of shea trees for charcoal production reduce the number and regrowth of productive trees and agricultural commercialization, land grabbing, and land conversion increasingly reduce the land available for shea production per se.

In order to better assess the benefits and opportunities but also perils that the globalization of the shea trade provides for Ghanaian smallholders, this article focuses on the local socio-economic dynamics that result from the globalization of the shea trade in our research areas in the Upper East Region (UER) and Upper West Region (UWR) in Northern Ghana. The emphasis is on the trade of pre-processed shea nuts because these represent the bulk of the shea products rural women from northern Ghana insert into global commodity chains. Pre-processed shea nuts are either purchased by nut exporters or increasingly by industrial shea butter processors within Ghana. The trade in raw shea butter has increased since the 1990s and high-quality organic artisanal shea butter sold in fair trade arrangement has become an additional income source for some rural women organized into groups by local or international NGOs, (Canel, Idemudia, & North, 2010, p. 3). However, this niche market is not discussed in this paper.

Based on qualitative and quantitative research in northern Ghana in 2013 this article analyzes in historical perspective the current socio-economic and institutional dynamics that have been sparked by the successive commercialization of shea nuts in four communities in the Upper East Region (UER) and Upper West Region (UWR) of Ghana. In doing so, we pay particular attention to the benefits and threats of market liberalization and integration for smallholders and outline the strategies that different local actors, shea nut pickers, agents, traders, and local shea nut butter processors adapt to profit in a changing economic environment.

2 Study area and methodology

The UER and the UEW have been selected because they are the least developed regions of Ghana, with the highest incidence of poverty and illiteracy and the largest proportion of households involved in agriculture (see

Table 1). Shea trees and the harvesting and processing of shea nuts are equally common in both regions and both areas are well integrated into the global shea value chains. In the Northern Region of Ghana, particularly around the regional capital Tamale, women groups organized by NGOs process at least parts of their shea harvest into shea butter for international cosmetic companies such as The Body Shop or L’Oreal. But in the rural hinterland of the UER and UWR people mainly sell pre-processed shea nuts to the agents of shea nut exporters or industrial processors, while shea butter is mainly produced for local consumption. Thus, this study focuses on the local dynamics of the shea nut trade rather than the trade in shea butter.

Table 1 Demographic information for UER and UEW

	UER	UWR
Population	702,110	1,046,545
Population density	118.4	38
Rate of urbanization	16.3	21.0
Literacy	47.5	46.2
Agricultural households	83.7	77.1
Household size	5.8	6.2
Poverty incidence*	70.4	87.9

Source: (*Coulombe & Wodon, 2007; GSS, 2010a)

The UER and UWR form part of Ghana’s Guinea savannah belt earmarked by a semi-arid climate and a dry season between April and November. The agro-ecological conditions of the two regions vary to some degree, as the population density in the UER has always been much higher and deforestation and soil degradation surpass that of the UWR. Available land allows shifting cultivation in the UEW, while most agricultural land is permanently cultivated in the UER. Agriculture is characterized by smallholder production with a large percentage of households also keeping livestock and fowls (UER: 82.8%; UEW: 63.7%) (GSS, 2010b, p. 296). In the UER millet, sorghum, rice, maize, groundnuts, and pulses are the main agricultural products. In the UEW the same crops are grown, however, with a stronger focus on maize and partially yam. In both regions most agricultural households are not able to completely rely on farming for their livelihoods. As elsewhere (Crawford & Hartmann, 2008; Ellis, 2000) most smallholder households diversify their livelihood strategies by engaging in trade, food processing, wage labor, labor migration, hunting, or gathering (Laube, 2008).

Research has been conducted from February to May 2013 in four villages of the UER and UWR in northern Ghana, Biu and Kologo and Dorimo and Kpongu respectively. Biu and Kologo are villages about 20-25 km west of Navrongo, the District capital of the Kasena Nankana East District (KNED), UER. Dorimo is a rural village about 20 km northeast of Wa, the district capital of the UWR, while Kpongu is a peri-urban farming community that forms part of Wa municipality. The economic activities in the four villages are dominated by smallholder farming, but notable differences exist. Kologo represents a typical rural farming community where smallholders entirely focus on rainy season production, whereas farmers in Biu, in addition to their rainy season farms, have access to Ghana’s largest irrigation scheme (Tono Irrigation Project). Thus they are also able to farm during the dry season (rice and vegetable). In the past, a survey showed that people in Biu, because of this additional income source, were better off than their counterparts in Kologo (Laube, 2008, p. 230). The idea to include those two communities in the study was to capture the potential effects of agricultural intensification on the local shea industry. In the UWR, Dorimo and Kpongu were selected in consultation with researchers at the University for Development Studies (UDS) at Wa, who facilitated the survey work in both regions. Here

it seemed important to capture the difference between a typical rural community (Dorimo) and a peri-urban settlement (Kpongu). In Kpongu bush and agricultural fallows are increasingly converted into building plots. Thereby access to shea trees in the bush was believed to be potentially curtailed, while additional income sources become available because of Kpongu's proximity to the regional capital.

Table 2 Information on the four study communities

	Biu		Kologo		Dorimo	Kpongu
Site	Rural		Rural		Rural	Peri-urban
District	Kassena	Nankana	Kassena	Nankana	Wa West	Wa Municipal
	East		East			
Main source of income	Rainy and dry season farming		Dry season farming		Dry season farming	Dry season farming
Population size	Approx. 3000		Approx. 2000		Approx. 2000	Approx. 2000
Infrastructure	Clinic, 2 primary schools, junior high school		2 primary schools, junior high school			Primary school, junior high school

The research is not truly comparative as different communities under study differ in more than one variable and the impact of different variables cannot be controlled. However, the selection of study communities allows deriving some insights in the differences and similarities in the shea production as well as organization, size and benefits of its trade in communities with different socio-economic characteristics. The study covers two rural farming villages, where people depend on the rural livelihood portfolio typical for northern Ghana (Joseph Awetori Yaro, 2006, p. 132) and two villages in which agricultural intensification (through irrigation) and peri-urban land-, market- and labor dynamics enhance the local availability of additional income sources. Apart from differing special and economic contexts, marked agro-ecological differences exist. Population density and pressure on land is much higher in the UER (see Table 1) and people in the UER have generally access to less shea trees than those in the UWR (see the number of shea trees people have access to in

Table 3).

Research included the use of qualitative and quantitative methods. Participant observation at local markets and during shea nut processing was combined with qualitative open-ended interviews with local shea nut pickers, processors and traders, as well as agricultural extension agents, in the UER. This provided first information about resource access, production patterns and produce marketing in historical perspective. Additionally focus group discussions (7-22 participants) with shea nut pickers, processor, and traders were held in all four study communities. One additional focus group discussion was held in Naga, a very remote village in the UER, which could not be covered because of logistical reasons. Group discussions were guided by semi-structured interview guides and used to further explore the historical development of the local shea market and the development of rules and regulations granting access rights to shea trees and nuts within the community. During this explorative phase the researcher was able to develop a better understanding of the research topic and to refine the research questions. After this initial phase, a quantitative survey was conducted. It was designed to collect information on shea tree access, shea nut -production and -marketing, and the benefits of the shea trade from women engaged in shea picking. Apart from this shea-picker survey a physical count of mature shea trees that individual respondents had exclusive access to was conducted. The survey, which was conducted with 202 shea nut pickers (approx. 50 in each community), was implemented by an enumeration team, consisting of research assistants and students of the University of Development Studies in Wa. The questionnaire was pre-tested in Biu and Kpongu. In the absence of any shea nut picker database the enumerators selected respondents using snowball sampling

(Bernard, 2011, p. 143 ff). Since shea nut picking is an almost exclusively female activity, only female respondents were interviewed. However, enumerators were asked to pay attention to kinship patterns and social structure (age, wealth, status) and to purposefully select respondents of different groups.

The female respondents were mostly middle aged, illiterate women - approximately 20% having received some basic education (see

Table 3). Typically, they were members of relatively large households, about two thirds of which had diversified livelihoods beyond shea nut production and farming and also engaged in trade, food processing, the production of charcoal or fuel wood or engaged in wage labour. Only in Biu, where access to irrigation raises farming opportunities and income, almost half of the household did only engage in agriculture and the shea business. The household well-being¹ was measured using an asset-based index. This index showed that average wealth levels in the various communities were largely comparable on a rather low level. Averagly the respondents reported assets valuing 2280.70 GHS/approx. 1150 USD in the form of buildings, means of transport, agricultural equipment, animals, and consumer goods owned by the households at the time of research. Households in Kologo reported the greatest wealth in assets.

Neither the number of respondents, nor the sampling strategy allows for statistical representativeness, but the statistical evidence provided helps to buttress arguments that are mainly derived with qualitative methods.

Table 3 Characteristics of respondents, respondents' households and respondents' assets in the four research communities in UER and UWR, 2013

		Name of community							
		UER				UWR			
		Biu (n=52)		Kologo (n=49)		Dorimo (n=49)		Kpongu (n=52)	
		M	S	M	S	M	S	M	S
Age of respondents		50.4	2.1	41.1	2.0	44.8	2.5	34.1	1.6
Household size		6.7	0.3	5.8	0.3	8.2	0.5	6.4	0.3
Household well-being		2101.0	378.1	2645.7	337.7	2066.7	342.1	2301.7	291.5
Level of school education	None	80.8%		81.6%		77.6%		80.8%	
	Basic	19.2%		18.4%		20.4%		17.3%	
	Secondary	0.0%		0.0%		2.0%		1.9%	
Livelihood portfolio	Only shea nut	3.8%		2.0%		2.0%		1.9%	
	Farming & shea nut	42.3%		28.6%		20.4%		13.5%	
	More sources	53.8%		69.4%		77.6%		84.6%	

¹ The well-being was measured with an index recording households' assets such as type of building materials used (mud, block, thatch, zinc), number of means of transport (motor bikes, bikes, donkey carts), number of livestock (sheep, goat, donkey, pigs, cattle), agricultural implements (knapsack, donkey cart, pumping machines) a weighing and summing up of the assets reported. Local cost of construction and the market prices of different items at the time of research under consideration (e.g. knapsack=50 GhS=50 points) were taken into consideration. The wealth index varies between 0 and 14825 points with an average of 2280.27 points and a standard deviation of 2406.18 points.

3 Accessing, Collecting and Processing Shea Nuts

In the research area shea nuts have been collected and processed since time immemorial. Various myths explaining how people came to know the benefit of shea nuts and the technology how to produce shea butter from it exist. During a group discussion in Naga (12.11.2012) the following version was narrated:

«Far, far, far into the ancestral period, a lady went into the bush and happened to encounter a dwarf and intended destroying it. But the dwarf said: “No, please, allow me to show you something beneficial. If I show you the good thing, I hope that will leave me to go free”. Then the lady agreed and listened to the dwarf that: “have you seen this tree. That is the shea. It has got some fruits, they are edible, and when they ripen you can eat. After eating it has some nuts. The nuts, you can dry them out, boil it, remove the outer shell. Then you can pound it, boil it and it will turn into oil, which you can use for [...] cooking and a lot of your home activities. So the lady agreed, left the dwarf and went home and tried it. It evolved from there that we started using the shea nuts.»

In northern Ghana collecting and processing shea nuts, is primarily a female activity that women, often assisted by their daughters, carry out. That does not mean that men are prohibited from collecting shea nuts, but may be made fun of. The gendered nature of this activity is a result of the wider division of labor in rural households. Shea nuts ripen around June when the rainy season has just begun and most men are very busy preparing their farms, a largely male activity. Since farming is the mainstay of rural livelihoods, men can normally not leave their farms to collect shea nuts. Therefore, women, who are less busy on the farms during that time, engage in shea nut collection. The processing of the nuts falls within the realm of food preparation - traditionally also women's the responsibility of women. In the past, all women knew how to process shea nuts and prepare shea butter. They usually learned it from their mothers or other female family members as part of their general practical education. Nowadays, many young girls are no longer able to prepare shea butter since schooling is mandatory and leaves less time for time-consuming shea butter processing. At the same time, in many houses shea butter is no longer prepared on a regular basis, but either bought from the local market or replaced with industrially produced cooking oil, the is often preferred because of a change in diet and food habits.

Most of the shea nut picking activities in the research areas are carried out in the early morning. Depending on the distance to the source – shea pickers travel up to 15 km in and out – women, assisted by their daughters, when they are not in school, set off in the early dawn and pick the shea nuts that have fallen from the shea nut trees overnight. In general, shea nuts – apart from children looking for the fleshy parts of the fruit – are not harvested from trees but left falling to ensure full maturity and to avoid conflicts between those sharing access to the nuts. Women usually pick as many nuts as they are able to carry - up to a full basin (approx. 15-20 kg). If many nuts have fallen the picker may heap them and come back to collect the nuts later on. This is only done in areas where the access to the nuts is exclusive and nobody can come and collect the piled nuts. In the house, the flesh is removed from the nuts before they are washed and left to dry. After drying the nuts are par-boiled and then shelled. The dry, shelled nuts are then stored, sold, or processed into shea butter.

Many respondents complained about the tedious nature of shea picking. Shea pickers get up at dawn and set off to their farms or into the bush. The distance covered, at least half of the distance carrying a heavy load of nuts, and the picking itself is physical demanding. Since picking happens during the rainy season pickers may also be beaten by rain, become cold and get sick. Furthermore, during the rainy season the grasses stand tall and the pickers run the risk of being bitten by snakes when searching for the nuts.

Access to shea nuts is gained in various ways. The nuts can be collected from trees on farms and fallows or from trees in the bush and shea pickers interviewed travelled up to up to 15 km (in an out) to collect shea nuts. Shea trees usually grow wild, although attempts to domesticate shea seem to be successful

(Yidana, 2004). New saplings are left growing during farming activities and may be protected from bush- and farm fires by the removal of burnable grasses and farm residue from the trees' vicinity. Trees on agricultural land are owned by the landowner. These are in most cases men, as land is traditionally owned and controlled by the male members of patrilineal clans. Although some women may have their own farmland, women get access to the shea trees on the land of their own or their husband's patrilineage. Access to the trees is shared among the different women of one man in polygamous marriages, and among the different women of the extended family. Sharing rules vary in between communities and families. Women may pick together and share the nuts, have access to particular trees or trees on particular farms or take turns in harvesting shea nuts. In Biu and Kologo these rules only apply to the mornings, when most of the shea picking activities take place. Non-family members are banned from harvesting shea nuts from trees on farm land unless permission is granted. In the afternoon, outsiders are allowed to pick those shea nuts that have fallen on the ground later in the day or that the women of the landowners failed to pick. In the UER, women own and fully control the proceeds of the shea nuts picked from trees owned by their male family members, while in the UWR nuts or the proceeds from their sale must be shared with the male tree owners. Many women who only get little amounts of nuts from trees on their own land or family land, or do not even have trees on such land, also pick shea nuts from the bush.² In our sample, 80% of the women interviewed harvested nuts from bush land, 55% had access to husband's farmland, and 16% harvested shea nuts on other family land. Only 7% had their own farmland (see Table 4). For almost half of the women bush land was the most important source of shea nuts, followed by their husbands' farmland (36%) and family land (8%).

Table 4 Shea nut pickers' access to shea nuts on different types of land according to the importance of the source

Rank	Access to shea trees on type of land	First importance	Second importance	Third importance	Total
1	Bush	98 49%	60 30%	4 2%	162 80%
2	Husband's farmland	72 36%	38 19%	1 1%	111 55%
3	Family land	17 8%	10 5%	6 3%	33 16%
4	Own farmland	11 5%	3 1%	1 1%	15 7%
5	People's farms	4 2%	5 2%	0 0%	9 4%
Total		202 100%	116 57%	12 46%	202 100%

The sources of shea nuts vary between the communities. In Kpongu and Dorimo, where population density and land pressure is historically lower than in the UER, and shea trees thus more ample, only 3.8 and 14.3% of the respective respondents claimed that their main source of shea nuts is the bush. In Biu and especially Kologo this number was significantly higher (25.0 and 71.4% respectively). Apart from ecological factors, it is also interesting to observe that in Biu and Kpongu, villages in which irrigation facilities and the close access to the urban economy of Wa respectively, give access to

² The bush land in the research areas in Northern Ghana is controlled by earth priests. These are spiritual leaders, which through special ancestral links are able to communicate with different spirits inhabiting the land. Earth priests conduct rites in order to bring about fertility, rich harvests, ample rains and thus communal wellbeing and pacify the gods when their rules and norms are broken, when for instance violent crimes are committed, incest occurs or totem animals such as crocodiles, snakes, or chameleons are killed (Der, 2001; Kasanga & Kotey, 2001; Laube, 2008). Bushland can be uncultivated, but is also cultivated periodically. When bush land is cultivated the women of the farming household have exclusionary access to the shea trees on their bush farm. Access to shea nuts from uncultivated bush land is free and anybody can pick them at any time.

additional income sources, shea nut pickers are less likely to spend their time to pick shea nuts from the distant bush. Counting of trees showed that averagely the women had access to about 31 shea nut trees, but the range was very wide (SD=52.819). Almost 40% of the women had no or little exclusive access, 43.3% had sufficient access, while less than 20% had abundant access to shea nut trees (see Table 5). Averagely the shea pickers in the UWR had exclusive access to a larger number of trees (Kpongu=25.54/Dorimo=78.58) as compared to those in the UER (Biu=16.27/Kologo=5.24).

Table 5 Exclusive access to shea trees according to community (N=201)

No. of shea trees	Community				Total
	Biu	Dorimo	Kologo	Kpongu	
0-10	18	5	37	19	79
	34.6%	10.4%	75.5%	36.5%	39.3%
11-50	32	15	12	28	87
	61.5%	31.3%	24.5%	53.8%	43.3%
>50	2	28	0	5	35
	3.8%	58.3%	0.0%	9.6%	17.4%
Total	52	48	49	52	201
	100%	100%	100%	100%	100%

Interestingly, the regional variation in exclusive access to shea trees has little bearing on the amount of shea nuts that the pickers report to be able to harvest (see Table 6). In usual years, when the fruiting of shea nuts is normal³, women in Biu, Dorimo and Kologo report to be able to harvest and process between approximately 230-260 kg of shea nuts. In Kpongu, despite relatively high average exclusive access to trees, the usual harvest is not up to half of that amount. In the group discussion in Kpongu two reasons could be determined. One the one hand, bush land has been largely converted to building plots, so that bush land is no longer easily accessible, on the other hand shea pickers in the UWR have to share the nuts that they are picking from their husbands farm and from family land with their husbands. While in Dorimo the women can pick from the bush, to have full control over their nuts, in Kpongu only shea trees on family land can be exclusively harvested. The nuts harvested have to be shared with the men, which reduces the incentive for women to greatly invest time and labor into shea nut picking. Furthermore, the peri-urban environment offers them alternative livelihood activities.

The reduced interest in shea nuts in Kpongu can also be seen by the fact that the variation in harvest in Kpongu between best, usual and bad years is much smaller than in all three other communities. Because of the wide variation in wild shea tree productivity, nut pickers face large fluctuations in harvests. In Biu, Dorimo and Kologo in years with bad harvests the amount of pre-processed shea nuts drops by almost 60% in comparison to years with normal fruiting. In years with a bumper harvest, the amount of pre-processed nuts the shea pickers are able to get almost doubles. These variations make shea nut picking a relatively unreliable source of income.

Table 6 Amount of processed shea nuts shea pickers harvest in bad, best and usual years in the four study communities

		Mean	Max.	Min.	S
Amount of processed nuts in a bad year (KG)	Biu	104.1	352.0	35.2	75.7
	Dorimo	99.0	440.0	.0	69.2
	Kologo	103.1	440.0	35.2	75.5

³ Wild shea trees have cyclical yielding patterns of 3 to 5 years and the fruiting of trees varies annually. That makes the production of shea nuts unstable. Experiments by the Cocoa Research Institute in Ghana showed wide fluctuations in production (Yidana, 2004, pp. 252-253)

	Kpongu	72.6	246.4	17.6	47.9
Amount of processed nuts in a best year (KG)	Biu	474.4	1320.0	70.4	263.7
	Dorimo	549.2	1830.4	70.4	371.9
	Kologo	420.2	1760.0	88.0	308.7
	Kpongu	108.3	528.0	35.2	84.8
Amount of processed nuts in a usual year (KG)	Biu	237.1	704.0	44.0	132.0
	Dorimo	261.1	880.0	35.2	193.5
	Kologo	232.2	880.0	44.0	158.5
	Kpongu	95.1	316.8	17.6	64.1

Asked about differences in the socioeconomic status of households and their engagement in shea picking respondents in all four communities emphasized that women of different ages and from different socio-economic backgrounds engage in shea picking. A typical answer would be: “Who can stay and let money lie in the bush” (group discussion in Kologo, 12.11.2012). But it was also explained that women with meaningful alternative income sources, such as shop owners, brewers or restaurant owners, do not leave their business to engage in shea nut picking. In the villages in the UER no significant difference in the amounts of processed shea nuts harvested by members of different wealth groups existed. Women from better off and rather rich households in Dorimo and from rather rich households in Kpongu tend to harvest 2-3 times as many shea nuts than women from very poor or poor backgrounds (see Table 7). While in the UER access to trees on husbands’ and family land is evenly spread between older and younger women and more shea trees are available in the bush, exclusive access to trees in the UWR is rather controlled by older women. Due to the typical life cycle of smallholder households middle-aged and older households tend to be wealthier, as the children grow up and become less dependent and contribute to the household income (Chayanov, 1966). In the group discussions, the women explained that grown-up girls help to pick shea nuts in the morning before going to school or in the afternoons.

Table 7 Average harvest of processed nuts per wealth group in the study communities per person (in Kg)

Wealth group	Name of community							
	Biu		Dorimo		Kologo		Kpongu	
	KG of nuts in a usual year	Mean	KG of nuts in a usual year	Mean	KG of nuts in a usual year	Mean	KG of nuts in a usual year	Mean
Very poor	252.1	148.7	231.7	167.3	209.5	181.5	88.0	55.3
Poor	233.9	119.7	176.0	90.4	225.5	131.9	88.0	50.3
Better off	183.0	104.4	406.6	272.2	264.0	119.9	97.6	84.5
Rather rich	252.3	193.9	396.0	62.2	242.9	222.4	220.0	62.2

The processed shea nuts can be stored, sold or locally turned into shea butter. Some are reserved for funerals, when large quantities of shea butter will be needed to prepare traditional dishes and shea nut can be given to support the bereaved family (see Table 8).

The large majority of shea pickers gather nuts to sell, only roughly one fifth mainly picks to process the butter into nuts, but almost half of the women will at least use some nuts to process shea butter for home consumption.

Table 8 Use of shea nuts by respondents in the four study communities

Use of shea nuts	First priority	Second priority
Selling	164	26
	81%	13%
Processing butter	38	92
	19%	45%
Funerals	0	36
	0%	24%
Total	202	154
	100%	76%

In the following chapter, we will describe how the local production is entering global shea nut commodity chains.

4 Local Integration into the Global Shea Nut Commodity Chain

While the history of the shea butter and shea nut trade can be traced in literature, local oral history accounts are less accurate. In group discussions and individual interviews local women in all four case communities portrayed a less differentiated picture. While some women explained that shea butter and shea nuts were commodities exchanged for foodstuffs in local barter during their grandparents time (FDGs in Kpongou and Dorimo, 21.04.2013), most women grew up in a situation where there was a steady, albeit sometimes fluctuating, demand for shea nuts and shea butter. Some old women stated that they started selling from Nkrumah’s time, but that demand increased after Rawling took over power in Ghana in 1981 (group discussion in Naga, 12.11.12). They clearly stated that they have little knowledge about who is buying for what purpose, although they are aware that many nuts are exported. For a long time they even believed that shea nuts were actually used to produce cold tar (ibid.).

While trade patterns are differentiated and shea pickers sell both on the local and district markets local actors’ knowledge about the structural organization of the shea trade seemed to be vague at best. Interestingly, even when interviewees were explicitly asked about the system of Shea Nut Farmer Societies (SNFS) that were the only legitimate providers of shea nuts under the monopoly of the Produce Buying Company between 1984 and 1994, none of them, including longstanding local shea traders, remembered the state-led purchase system, despite the pervasive influence on the shea trade it is said to have exercised “in all corners of Ghana’s northern sector” (Chalfin, 2004b, p. 141).

In general, shea pickers are rather indifferent which external trade partner they deal with - as long as they pay. Trade relationships are not institutionalized in the form of contracts, but individual shea pickers sell at different times and places as they see fit. In general, most of the respondents sold most of their shea nuts to traders in the local market or traders, agents or shea butter processors within their community. In communities with closer and more regular access to the district market (Kpongou and Biu), the number of shea pickers who reported to sell in the district market was significantly higher (see Table 9). Since transportation costs are high – and especially very poor women are in dire need of cash during the lean season – they tend to sell more of their nuts locally, despite the fact that prices are lower. Only 37.8% of the very poor, against 54.4% of the poor and 48.7% of the better off and 54.5% of the rather rich respondents in our sample sold at least part of their nuts on the district market. On the contrary, very poor and poor women report much more frequently to sell their products within the community.

Table 9 Marketing location of shea nuts in different study communities

		Name of community			
		Biu	Kologo	Dorimo	Kpongou
Location shea marketing	Local market	81.3%	87.0%	72.9%	86.0%
	District market	47.9%	26.1%	25.0%	86.0%
	Within community	2.1%	10.9%	33.3%	8.0%

As shea pickers sell their cache in different locations, they also sell it to a variety of purchasers (see Table 10). Although local patterns vary, most shea nuts are sold to local or district traders that deal in a variety of foodstuffs. Almost equally important are sales to individual shea butter processors, which produce shea butter for sale on the local or district market.

Table 10 Actors providing shea nut market access in different communities

		Trader	Shea nut processor	Agent	NGO	N
Community	Dorimo	43	27	37	1	48
		89.6%	56.2%	77.1%	2.1%	
	Kologo	28	33	10	0	46
		60.9%	71.7%	21.7%	0.0%	
	Biu	27	22	24	0	47
		57.4%	46.8%	51.1%	0.0%	
	Kpongu	49	37	18	0	51
		96.1%	72.5%	35.3%	0.0%	
Total	147	119	89	1	192	

The group discussions showed that in none of the study communities shea butter is produced for long-distance trade. Less than half of the women engage in direct trade with the agents of export companies, although this number may be underestimated as many local traders also act on behalf of export companies, but are not perceived as agents since they do not exclusively buy and sell shea nuts.

Apart from their role as middlemen in the export business, local shea traders perform an important function for many poor shea butter processors. According to information from the group discussions most women sell large parts of their shea nuts shortly after harvest in the lean season, when need for cash and additional foodstuffs is strongest. Local traders buy and store significant amounts of shea nuts and retail to local processors during the remainder of the year, usually with healthy profits, as the price of shea nuts frequently doubles or triples during the year (own observations 2012/2013, see also Carrette et al., 2009, p. 18; Elias & Carney, 2007, p. 43 for Burkina Faso).

Table 11 Changing prices of pre-processed shea nuts in Navrongo market 2012/13⁴

Date	Price per bowl	Price (in GHS) per bag (85 kg)	Price (in USD) per bag (85 kg)
May 2012	1.20	15.00	7.77
June 2012	1.30	16.00	8.29
July 2012	1.50	18.00	9.33
August-September 2012	1.60	22.00	11.40
October-November 2012	1.80	25.00	12.95
December 2012-January 2013	2.00	30.00	15.54
February-March	2.50	40.00	20.72
April/May 2013	2.50	45.00	23.31

Although quarrels about the volumetric measuring of nuts regularly occur, as traders use different bowls for buying and selling, the role of the traders is also acclaimed. Poor shea processors often buy shea nuts on credit and only pay back after they have sold the butter. NGOs that are involved in the processing of shea nuts in the Northern Region (Carrette et al., 2009) do not play any important role in the shea market of our study areas in the UER and UWR.

Shea pickers' decisions where and whom to sell to, may depend on a number of factors such as price differentials between the local and district markets, kinship, friendship, the frequency and cost of access to markets, but is also determined by the quality of nuts. The quality largely depends on the post-harvest processing (removal of flesh, drying, parboiling, second drying and removal of shell). When the nuts stay wet for too long during the process, they start molding and turn black. Such nuts can easily be sold to agents and exporters (see also Niels Fold, 2004, p. 74), but yield little on the local

⁴ Average interbank rate from 01.05.2012-30.04.2013 according to OANDA.com was 0.5181 USD per 1 GHS. Prices per bowl as reported by middle women at the village level. Price per bag as paid by shea nut agents buying for exporters/industrial processors.

market as the quality and amount of shea butter that can be manually extracted is lower than that of properly prepared shea kernels.

The international demand for shea nuts, mostly processed into shea butter used in cocoa butter equivalents (CBE) in the confectionary industry, has been constantly increasing. Between 1994 and 2007 the market for nuts rose from 50,000 mt to 250,000 mt annually, and Ghana is among the major producers (The United Nations Conference on Trade and Development [UNCTAD], 2013). Therefore, market problems, often one of the major dangers of the increasing dependency of smallholders on global commodity chains, has not yet struck local shea producers (see

Table 12).

Table 12 Marketing problems encountered in the different communities

Name of community	Marketing problems					Total
	No problem	Low prices	Fluctuating demand	Cheating/ credit	Storage/ transport	
Biu	26 50.0%	10 19.2%	10 19.2%	6 11.5%	0 0.0%	52 100.0%
Dorimo	16 32.7%	17 34.7%	5 10.2%	3 6.1%	8 16.3%	49 100.0%
Kologo	24 49.0%	13 26.5%	11 22.4%	1 2.0%	0 0.0%	49 100.0%
Kpongou	33 63.5%	15 28.8%	1 1.9%	0 0.0%	3 5.8%	52 100.0%
Total	99 49.0%	55 27.2%	27 13.0%	10 5.0%	11 5.4%	202 100.0

Even in good years shea pickers face no difficulties in selling their cache. However, local traders, who buy nuts during harvesting time in order to retail with profit during the dry season have reported that they have been forced to sell without profit when prices failed to rise. While almost half of the shea pickers did not report any marketing difficulties, more than a quarter complained about the generally low prices of shea nuts, especially given the tedious nature of shea nut picking. Other reported difficulties were temporary demand fluctuations, cheating during weighing, and the failure to pay nuts bought on credit, as well as problems of storage and transport. The low prices are a result of the terms of trade and the asymmetric negotiation power in the value chain, as well as the large number of intermediaries involved. Shea nut pickers, but also local agents and traders, state that they are hardly able to substantially influence the prices offered by processors (see also Scholz, 2010, p. 10). Prices seem to be fixed by a small number of shea nut processing companies and also depend on the fluctuations of the prices of cocoa as well as other CBEs (Elias & Carney, 2007, p. 49).

Despite these problems, almost all women in the case study communities, unless otherwise engaged in business or physically too weak, engage in shea picking, independent of their economic status. While respondents stated that in the past nuts were lying in the bush, rotting and being carried away by the rain, nowadays virtually all accessible resources are exploited (e.g. group discussion Naga, 12.11.2012). The impact of the shea industry on local livelihoods and the question, in how far the shea trade can truly contribute to poverty reduction in the rural areas in the UER and UWR will be discussed below.

5 Profits and Benefits throughout Ghana's Shea Commodity Chain

As can be seen from the amounts harvested and the prices paid for shea nuts the participation of local smallholder households in the global shea commodity chain is hardly profitable. Looking at the raw value of the shea nuts, not taking the production cost and opportunity cost of picking and processing into account, shea pickers are averagely able to pick shea nuts of a value of 63.57 GHS or 32.93 USD in a usual year.

Table 13 Total value of shea nuts gathered per person in a usual year⁵

	N	Minimum	Maximum	Mean	S
Value of shea nuts in GHS	201	5.46	273.06	63.58	48.73
Value of shea nuts in USD	201	2.83	141.47	32.94	25.25

The figures show quite some degree of variation. However, even the 141.47 USD in value that the shea picker with the largest annual yield reported is not too impressive. A closer analysis shows that there is no real significant variation in value generated in different communities and by shea nut pickers of different wealth groups (see Table 14).

Table 14 Mean value of shea nuts picked in a usual year per community and wealth grouping

Wealth group		Name of community			
		Biu	Dorimo	Kologo	Kpongu
very poor	Mean value of shea nuts in USD	40.53	37.25	33.68	14.15
poor	Mean value of shea nuts in USD	37.61	28.29	36.25	14.15
better off	Mean value of shea nuts in USD	29.43	65.36	42.44	15.69
rather rich	Mean value of shea nuts in USD	40.56	63.66	39.05	35.37

The variation that can be observed can be explained by the lack of access to shea trees in the bush in Kpongu and the control of trees and labor by older women in wealthier households in the UWR.

These findings do not mean that shea nut picking does not play an important role in the diversified livelihood portfolio of smallholder households in the UER and UWR. As can be seen by the tireless effort that shea pickers make and the risk that they take, shea nuts are a welcome supplement at the beginning of the rainy season when rural households are short of foodstuffs and need cash for daily expenses and to support children's education (see Table 15).

Table 15 Use of proceeds from shea nut sales

Rank	Use of shea profit	First priority	Second priority	Third priority	Total
1	Food	120 59%	55 27%	8 4%	183 39%
2	Education	49 24%	53 26%	17 8%	119 26%
3	Daily expenses	14 7%	24 12%	15 7%	53 11%
4	Health expenses	1 1%	19 9%	31 15%	51 11%

⁵ Value of shea nuts is calculated based on the harvest shea nut pickers reported for a normal year, average prices for a kg of shea nuts as paid by agents during the 2012/2013 shea nut season. This is rather optimistic as most shea nut pickers actually sold during the lean season when prices were lower and often sold to local brokers, who pay even less. The USD value is arrived at using the exchange rate as explained in footnote 4.

5	Clothes	6	5	14	25
		3%	2%	7%	5%
6	Farm inputs	3	5	16	24
		1%	2%	8%	5%
7	Transport	0	5	0	5
		0%	2%	0%	1%
	Other	2	1	4	7
		1%	1%	4%	2%
	Total	202	168	104	474
		100%	83%	51%	100%

The picture is similar to other parts of West Africa (Schreckenber, 2004, p. 99; Shackleton & Gumbo, 2010, p. 82). The shea nut trade is important for food security, rural education, health care, and a variety of daily expenses. However, it is not more than a welcome addition to the other incomes of diversifying poor rural households that can be reaped when rural women have the time, because they have a less busy schedule and face little opportunity cost at the beginning of the rainy and farming season. If real choices have to be made, women often engage in other more lucrative activities other than shea nut picking. As one of our respondents explained:

«When it is the season for shea nuts and I know that my work on the farm is less then I spend a day or two to go and look for nuts but my main thing is the farming work. But if I have time I go to pick. I have not got the time to pick shea nuts all the time. I will be ready [with my farming] but by then shea nuts time will be over. So last year I did not pick anything and even this year, I did not pick anything meaningful. But I can tell you that it was better this year because there was this day I was going to my farm and it started to rain heavily. So I took shelter under one of the trees there. After I just picked shea nuts from around there and brought it home and that is just all so I pick for last year.»
(Akanvaani Yuuya, Bui, UER, 13.11.2012)

In general, the women explained that, if they have their own, they largely focus on their farms, or on wage labor opportunities and businesses rather than shea nut picking. Women who lack their own farms or have finished preparing them, have no profitable business opportunities, or do not have the opportunity to engage in wage labour, like those women close to the irrigation project in Bui have, rely on the picking of shea nuts. Others take the opportunity as it arises. While wage labor, business or shea butter production can provide important economic opportunities, it is the farming that is most important to most women. As Achampong (09.11.2012, Bui, UER), a roughly forty year old married mother of four children in Bui, who is engaged in shea picking, wage labor, shea butter processing and farming expressed:

«Your own work is more profitable than doing other jobs like picking nuts, making oil, or weeding for somebody for money. Your own farm work is more beneficial. [...]. In your own farm work you get your harvest in bulk. So you can sell it at once and use the money to get something meaningful that is why I prefer my own.»

But for women of different wealth groups, who do not have alternative and more beneficial income sources, and related opportunity costs, shea nut picking is more important, though not highly profitable. Only for these types of women shea nut picking makes economic sense, as prices paid for the product, especially at harvesting season when most poor women sell, are way below the cost of production, if labor is priced using the official Ghanaian minimum wage (see Table 16).

Table 16 Estimated cost of production, logistics and prices paid for shea nuts at different levels of the Ghanaian shea commodity chain in USD, shea season 2012/2013

Time	Local cost of production for one MT of shea nuts ⁶	Price of one MT of shea nut bought by local traders ⁷	Price of one MT of shea nut bought by agents from local traders ⁸	Cost paid by assemblers per MT shea nuts ⁹	Cost per MT of shea nuts incl. Transport to Tema ¹⁰	Price per metric ton of shea nut FOB in Tema ¹¹
May 2012	240.82	81.81	91.43	103.55	117.01	350.00
June 2012	240.82	88.62	97.52	110.45	124.81	350.00
July 2012	240.82	102.26	109.72	124.26	140.41	350.00
August-September 2012	240.82	109.07	134.10	151.87	171.62	350.00
October-November 2012	240.82	122.71	152.38	172.58	195.02	350.00
December 2012- January 2013	240.82	136.34	182.86	207.10	234.02	350.00
February-March 013	240.82	170.43	243.81	276.13	312.03	350.00
April/May 2013	240.82	170.43	274.29	310.65	351.03	350.00
Averages	240.82	122.71	160.76	182.08	205.75	350.00
Price Increases (%)			31.01	13.26	13.00	70.11

It seems that main profit in the shea business is rather made at higher levels of the commodity chain. While traders and brokers make some profit by mediating between volumetric measurements at the local level and weighing of nuts at the retail level and through commissions received from processors or exporters, or assemblers, higher level shea agents which bulk shea nuts for retail to processors, exporters, or international buyers, the gains made at this level are not outrageous. Observation and measurement in the market showed that the gains made this way amount to an estimated 30%, not taking the cost local traders incur for labor, storage and transportation into account. Depending on the capital they receive from the agents of larger companies, and level of operation in the local shea commodity chain (village or district market) the local shea traders interviewed handled 10 to 500 bags of shea nuts. During the 2012/2013 shea nut season the commission paid by the agents was 2 GHS per bag of shea nuts. Despite these income sources the local brokers did not seem to be earning large sums of money. Given that she is able to trade in 100 bags, which is already a lot for most brokers, a local trader would have gotten 200 GHS in commissions and roughly earned 625 GHS from differences in measurement¹². Not taking the cost of transport, storage, labor and opportunities into account, she would gain 825 GHS/323 USD throughout the year. She could make additional profit, if she were able to speculate with own money i.e. to buy shea nuts cheap during the harvesting season, and sell them at peak shortly before the new harvest. However, many local brokers we encountered lacked the

⁶ Cost of labor and input factors according to Addaquay (2011, p. 6). Labor cost has been adjusted to 2012 daily minimum wage (4.48 GHS/8 hrs), input cost has been adjusted to inflation between June 2010 to June 2012 (19.69%).

⁷ Own observation

⁸ Own observation

⁹ Cost for local transport, storage, and miscellaneous expenses. Based on the calculation of Addaquay (2011, p. 6)

¹⁰ Calculated base of the findings of Masters et al. (2004, p. 49)

¹¹ Price based on an online-survey of shea prices offered in the shea season 2012/2013. Lowest price offered has been chosen.

¹² The calculation is based on the assumption that a local trader is able to gain roughly 30% from measuring differences and is based on the average price paid to shea nut pickers in the season 2012/2013.

necessary capital to engage in large-scale hoarding, but often keep some bags of high-quality nuts that can be sold to local shea butter processors, when prices are high in the dry season. Local traders were mainly illiterate women and men, who entered the shea nut trade as one of their business lines. They mostly also traded in other agricultural goods and showed little signs of large accumulated wealth. Larger profits are made further up the commodity chain (see Table 16). It is estimated that the largest profits (an estimated 70% increase of price from the former level) within the Ghanaian shea commodity chain are made by those assemblers and exporters who are able to sell to international buyers at Tema. The same holds true for the large international shea processing companies such as AarhusKarlshamn, or Loders Crocklaan Limited, and large shea processors operating in Ghana such as Wilmar (GSFI), Foods Fats & Fertilizers (3F) Limited, and Ghana Nuts Limited (GNL), and the parastatal Produce Buying Company (PBC), who all have their own agent networks of agents and assemblers in Ghana. These traders and processors generate large profits by buying nuts at exploitative local prices. But even if the terms of trade would be fairer it remains unclear, in how far shea nut picking has indeed any potential to transform rural northern Ghana or will continue to be a coping strategy that helps people to survive, but also keeps them in a cycle of self-exploitation and poverty.

6 Smallholder Integration into the Global Shea nut Commodity Chain and Rural Transformation: Myth or reality?

The research results presented above clearly show that shea nut picking is an important part of the highly diversified local livelihood portfolios in the study communities that is deeply rooted in the local historical, cultural and spiritual contexts. Rural women, most of them illiterate or little educated engage into this risky, tedious, and time consuming activity at a time of the year, when many rural households lack financial resources and often even foodstuffs, and when their heavy domestic as well as agricultural schedule leaves them some time. Both the general level of poverty of rural households as well as the timing of the shea harvest make shea nut picking an important activity helping to cope with the worst consequences of rural poverty. Furthermore, shea butter is an important ingredient of local cuisine as well as social and ritual life. The amount of shea nuts women can pick is determined by the access they can get to shea trees and the labor they can command. Access to shea trees in rural communities has become institutionalized since the commercialization of shea trade. Different rules governing access to trees within the community and within individual families on different types of land have developed. Many women lack exclusive access to shea trees and have to share trees with female relatives or are forced to pick from the bush where bush land is still available. But even with access to ample sources of shea nuts, women are limited by the time available for this activity. Between domestic responsibilities, the need to work on their husbands or their own farms, which is economically more beneficial, only limited working time, usually in the early morning and the late afternoon, is available for shea picking and processing. Therefore, the amount of nuts that women are able to pick is limited. Although in wealthier households, particularly in the UWR, where older women control many family-owned trees and have access to the labor of children, the average harvest is limited. So is the income that can be generated from shea nut picking. This is partly due to the time of the year when most women sell their shea nuts – just after harvest when prices are low – and partly due to the poor and, given the cost involved, exploitative prices that are offered in general. In this light the shea narratives, highlighting the transformative and poverty alleviating potential of global shea commodity chains being told by the media, politicians and international as well as local NGOs, become stale. It is unlikely that shea nut pickers will be able to greatly increase their production as labor is lacking and access to shea trees is rather dwindling than increasing. Especially in the bush, the most important source of shea nuts for most women, access is getting more difficult. In peri-urban settings like Kpongou, most bush land has already been converted into building plots, but also in rural areas like in Kologo or Bui the pressure on the bush is large. Here local chiefs give out the bush land to Fulani herdsmen who often feed cattle they herd for local business men on shea nuts. More importantly, the conversion of bushland as a consequence of large and medium agricultural projects, mango farms in the case of Bui and Kologo, by international as well as local investors, further limits the access to shea nuts. These are dynamics which are not peculiar to the study communities but happen all over (northern) Ghana as agricultural expansion and urbanization is increasing and investors seek opportunities to produce cash crops, agricultural raw materials or bio fuels (Laube, 2008; Lund, 2006; Schoneveld, German, & Nutakor, 2011; Ubink & Amanor, 2008). It is therefore questionable, if individual shea nut pickers will be able to increase or even maintain their level of production in the long run. Similarly, despite increasing global demand, it cannot be expected that prices for shea nuts nor the share of the profit that women gain within the Ghanaian or global commodity chain will rise to a level at which shea nut picking becomes anything more but a welcomed supplement in impoverished homes. At the global level, shea prices are depending on the price of cocoa butter and the prices of other vegetable oils that can serve as substitutes for shea butter in CBE or the food industry in general. Therefore, it is unlikely that shea prices will substantially increase in near future. As in other sectors of the economy, prices for shea nut products are dictated by a limited number of large transnational companies, which can outplay competition between different producers, and easily substitute places and products (Gereffi, 1994). But even at the national level in Ghana minimum prices

for shea nuts that have been announced since 2011 by the government (Ghana Broadcasting Company [GBC], 2011) have not been enforced and often even remained lower than the actual market price. Despite the political discourse, the government, at the expense of shea pickers, seems more eager to profit from low producer prices, through the PBC, than actually addressing the interests of poor rural households. This also reflects in the lack or untimeliness of credit facilities that could help women to store their nuts until prices rise in later parts of the shea nut season, which was decried by many of our respondents. But even if prices would multiply, given an average annual shea income of 32 USD in the study communities in the 2012/2013 season, a figure that is mirrored in studies in other West African countries (Belcher & Schreckenber, 2007; Boffa et al., 1996; Elias & Carney, 2007; Schreckenber, 2004), shea nut pickers are still far from becoming Ghana's "nouveau riche" (Shore, 1996). A finding that is supported by a FAO report about the benefits of non-timber forest products that concluded: "the picture is somewhat less unambiguous regarding how these products may assist poor people to accumulate assets, improve their standards of living and move out of poverty, certainly in any enduring way. Non-wood forest products, thus, tend to be more central to poverty mitigation that is, preventing the deepening of poverty, than to poverty reduction or elimination, or lifting people out of poverty" (cited in Shackleton & Gumbo, 2010, p. 76).

This is not to denounce attempts by government agencies, NGOs and development partners to assist shea traders with fair prices, trainings, credit, improved transport facilities, or even wellington boots and gloves. As stated above any additional assistance and income is welcome in impoverished rural households. But in order to transform rural northern Ghana and to curb rural poverty the contribution of shea seems to be a myth rather than a reality. Different avenues for transforming rural Ghana must be sought. In the meantime, the current shea nut narrative seems to be a welcome discursive means with which vested economic, political and ideological interests can be masked.

7 References:

- Addaquay, J. (2011). SNV Shea Market Assessment: Pro-Poor Value Chain Analysis. A Report Submitted to Northern Rural Growth Programme (NRGP) SNV, 44.
- Amanor, K. (2011). *Global Landgrabs, Agribusiness and the Commercial Smallholder: A West African perspective*. Paper presented at the International Conference on Global Land Grabbing, Brighton.
- Aniegye, N. S. (2012). *Settling in and Holding on: A Socio-historical Study of Northern Traders and Transporters in Accra's Tudu: 1908-2008*. Leiden: African Studies Centre.
- Belcher, B., & Schreckenber, K. (2007). Commercialisation of non-timber forest products: A reality check. *Development Policy Review*, 25(3), 355-377.
- Bernard, H. R. (2011). *Research methods in anthropology* (5 ed.). Lanham, Maryland: Altamira Press.
- Boffa, J.-M., Knudson, D. M., Yameogo, G., & Nikiema, P. (1996). *Shea nut (Vitellaria paradoxa) production and collection in agroforestry parklands of Burkina Faso*. Paper presented at the Domestication and Commercialization of Non-Timber Forest Products in Agroforestry Systems, Nairobi, Kenya.
- Botchway, K. (2001). Paradox of Empowerment: Reflections on a Case Study from Northern Ghana. *World Development*, 29(1), 135-153.
- Brenya, J. O. (2013, 24.03.2014). Buipe Shea Butter factory closed down. Retrieved from <http://www.ultimate1069.com/buipe-shea-butter-factory-closed-down-1510/>
- Canel, E., Idemudia, U., & North, L. L. (2010). Rethinking extractive industry: Regulation, dispossession, and emerging claims. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 30(1-2), 5-25.
- Carette, C., Malotaux, M., van Leeuwen, M., & Tolkamp, M. (2009). *Shea nut and butter in Ghana. Opportunities and constraints for local processing*. Retrieved from
- Chalfin, B. (1996). Market reforms and the state: the case of shea in Ghana. *The Journal of Modern African Studies*, 34(3), 421-440.
- Chalfin, B. (2001). Border Zone Trade and the Economic Boundaries of the State in North-East Ghana. *Africa: Journal of the International African Institute*, 71(2), 202-224.
- Chalfin, B. (2003). The North goes global: Export markets and indigeneous commodities. In F. Kröger & B. Meier (Eds.), *Ghana's North. Research on Culture, Religion, and Politics of Societies in Transition* (pp. 21-43). Frankfurt a. M.: Peter Lang.
- Chalfin, B. (2004a). Old Commodities in New Niches: The Shea Economy as Frontier. *African Economic History*(32), 51-63.
- Chalfin, B. (2004b). *Shea butter republic: State power, global markets, and the making of an indigenous commodity*. New York: Routledge.
- Chayanov, A. V. (1966). *The Theory of the Peasant Economy*. Homewood: R .D. Irwin Inc.
- Coulombe, H., & Wodon, Q. (2007). *Poverty, livelihoods, and access to basic services in Ghana*. Retrieved from Accra:
- Crawford, G., & Hartmann, C. (2008). Introduction: Decentralisation as a pathway out of poverty and conflict? In G. Crawford & C. Hartmann (Eds.), *Decentralisation in Africa: A Pathway out of Poverty and Conflict?* Amsterdam: Amsterdam University Press.
- Crelerot, F. (1995). *Importance of Shea Nuts for Women's Activities and Young Child Nutrition in Burkina Faso: the case of the Lobi*. (PhD-thesis), University of Wisconsin, Madison.
- Der, B. (2001). Traditional Political Systems of Northern Ghana. In Y. Saaka (Ed.), *Regionalism and Public Policy in Northern Ghana*. New York: Peter Lang.
- Dolan, C., & Humphrey, J. (2000). Governance and trade in fresh vegetables: the impact of UK supermarkets on the African horticulture industry. *Journal of Development Studies*, 37(2), 147-176.
- Elias, M., & Carney, J. (2007). African Shea Butter: A feminized subsidy from nature. *Africa: Journal of the International African Institute*, 77(1), 37-62. doi:10.2307/40026697

- Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289.
- Fairhead, J., & Leach, M. (1995). False forest history, complicit social analysis: rethinking some West African environmental narratives. *World Development*, 23(6), 1023.
- Fairhead, J., & Leach, M. (1996). *Misreading the African landscape : society and ecology in a forest savanna mosaic*. Cambridge: Cambridge Univ. Press.
- Fold, N. (2000). A Matter of Good Taste? Quality and the Construction of Standards for Chocolate Products in the European Union. *Cahiers d'économie et sociologie rurales*, 55-56, 92-110.
- Fold, N. (2002). Opportunities and Constraints to Local, Regional and International Trade in Shea Butter. *SEREIN Occasional Papers*, 13.
- Fold, N. (2004). Spilling the beans on a tough nut: Liberalization and local supply system changes in Ghana's Cocoa and Shea chains. In A. Hughes & S. Reimer (Eds.), *Geographies of Commodity Chains*. London: Routledge.
- Fold, N., & Gough, K. V. (2008). From smallholders to transnationals: the impact of changing consumer preferences in the EU on Ghana's pineapple sector. *Geoforum*, 39(5), 1687-1697.
- Fold, N., & Reenberg, A. (1999). In the Shadow of the 'Chocolate War': local marketing of she nut products around Tenkodogo, Burkina Faso. *Danish Journal of Geography*(2), 113-123.
- Gereffi, G. (1994). The Organization of Buyer-Driven Global Commodity Chains: How US Retailers Shape Overseas Production Networks. In G. Gereffi & M. Korzeniewicz (Eds.), *Commodity Chains and Global Capitalism*. Westport: Greenwood Press.
- Ghana Broadcasting Company [GBC]. (2011). Government announces minimum price for sheanut purchases. Retrieved from <http://www.gbcbghana.com/index.php?id=1.334927.1.600204>
- Gibbon, P., & Ponte, S. (2005). *Trading down: Africa, value chains, and the global economy*. Philadelphia: Temple University Press.
- Gough, K. V., Langevang, T., & Namatovu, R. (2014). Researching entrepreneurship in low-income settlements: The strengths and challenges of participatory methods. *Environment and Urbanization*, 26(1), 297-311.
- GSS. (2010a). *2010 Population and Housing Census. Summary report of final results*. Retrieved from Accra:
- GSS. (2010b). *2010 Population and Housing Census: National Analytic Report*. Retrieved from Accra: http://www.statsghana.gov.gh/docfiles/2010phc/National_Analytical_Report.pdf
- Hatskevich, A., & Essilfie, J. E. (2013). Shea picking as an engine of poverty reduction in northern Ghana (Case study: Four communities in the Bolgatanga municipality). *European Scientific Journal*, 9(23), 291-314.
- Hatskevich, A., Jenicek, V., & Antwi-Darkwah, S. (2011). Shea Industry - A means of poverty reduction in northern Ghana. *Agricultura Tropica Et Subtropica*, 44(4), 223-228.
- Holmén, H., & Hydén, G. (2011). African agriculture: from crisis to development? In G. Djurfeldt, E. Aryeetey, & A. C. Isinika (Eds.), *African Smallholders: Food Crops, Markets and Policy* (pp. 23).
- Holtzman, J. (2004). The Shea Butter Value Chain-Study. Synthesis and Recommendations for WATH. *West Africa Trade Hub*.
- Kasanga, K., & Kotey, N. A. (2001). *Land Management in Ghana: Building on Tradition and Modernity*. Retrieved from London:
- Kwode, P. A. (2010). Shea Nut and poverty alleviation in northern Ghana. Retrieved from GhanaWeb website: <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=195236>
- Langevang, T. (2007). Movements in Time and Space: Using Multiple Methods in Research with Young People in Accra, Ghana. *Children's Geographies*, 5(3), 267-282. doi:10.1080/14733280701445853
- Laube, W. (2008). *Changing natural resource regimes in northern Ghana: Actors, structures and institutions*. Münster: LIT.
- Laube, W., Schraven, B., & Awo, M. (2012). Smallholder adaptation to climate change: dynamics and limits in Northern Ghana. *Climatic Change*, 111(3-4), 753-774. doi:10.1007/s10584-011-0199-1

- Lovejoy, P. E. (1980). *Caravans of kola: the Hausa kola trade, 1700-1900*. Zaria, Nigeria: Ahmadu Bello University Press
- Lovett, P. (2004). The shea butter value chain: production, transformation and marketing in west Africa. *West Africa Trade Hub*, November.
- Lund, C. (2006). Who owns Bolgatanga? Issues of urban property in northern Ghana. In R. Kuba & C. Lentz (Eds.), *Land and the politics of belonging in West Africa* (pp. 77-98). Leiden: Brill.
- Masters, E. T., Yidana, J. A., & Lovett, P. N. (2004). Reinforcing sound management through trade: shea tree products in Africa. *Unasylva*, 55(219), 46-52.
- Ministry of Food and Agriculture [MOFA]. (2007). *Food and Agriculture Sector Development Policy (FASDEP II)*. Retrieved from Accra:
- Mitchell, M. I. (2011). Insights from the cocoa regions in Côte d'Ivoire and Ghana: Rethinking the migration–conflict nexus. *African Studies Review*, 54(02), 123-144.
- Moore, S. (2008). The role of *Vitellaria paradoxa* in poverty reduction and food security in the Upper East region of Ghana. *Earth and Environment*, 3, 209-245.
- Nin-Pratt, A., Johnson, M., & Yu, B. (2012). *Improved performance of agriculture in Africa South of the Sahara: Taking off or bouncing back* Retrieved from Northern Rural Growth Programme [NRGP]. (2007). Northern Rural Growth Programme: Project Design Document. Rome: International Fund for Agricultural Development (IFAD).
- Peil, M. (1975). Female roles in west african towns. In J. Goody (Ed.), *Changing Social Structure in Ghana: Essays in Comparative Sociology of a New State and an Old Tradition*, London: International African Institute (pp. 73). London: IAI.
- Poudyal, M. (2011). Chiefs and trees: Tenures and incentives in the management and use of two multipurpose tree species in agroforestry parklands in northern Ghana. *Society & Natural Resources*, 24(10), 1063-1077.
- Raikes, P., & Gibbon, P. (2000). Globalisation and African Export Crop Agriculture. *The Journal of Peasant Studies*, 27(2), 50-93.
- Richard Truscott (LMC international). (2013). *World Cocoa and CBE markets*. Paper presented at the Global Shea Conference, Abijan.
- Savannah Accelerated Development Authority [SADA]. (2010). *Synopsis of Development Strategy (2010-2030)*. Retrieved from Accra:
- Scholz, K. (2010). *Governance and upgrading in high-value chains of non-timber products: The case of Shea in Ghana*. (Diploma Diploma Thesis), University of Frankfurt, Frankfurt, a.M.
- Schoneveld, G. C., German, L. A., & Nutakor, E. (2011). Land-based investments for rural development? A grounded analysis of the local impacts of biofuel feedstock plantations in Ghana. *Ecology and Society*, 16(4). doi:10.5751/es-04424-160410
- Schreckenber, K. (2004). The contribution of Shea butter (*Vitellaria paradoxa* CF Gaertner) to local livelihoods in Benin. In Terry Sunderland & O. Ndoye (Eds.), *Forest products, livelihoods and conservation. Case studies of non-timber forest product systems* (Vol. 2 (Africa), pp. 91-113). Jakarta: CIFOR.
- Shackleton, S., & Gumbo, D. (2010). Contribution of non-wood forest products to livelihoods and poverty alleviation. In Emmanuel N. Chidumayo & D. J. Gumbo (Eds.), *The Dry Forests and Woodlands of Africa Managing for Products and Services* (pp. 63-92). London: Earthscan.
- Shore, B. (1996). *Culture in mind: Cognition, culture, and the problem of meaning*: Oxford University Press.
- Sofo, S., Kpebu, D., & Belcher, D. (2007). *A Postcolonial Perspective of Secondary Physical Education Teachers' Value Orientations in Sub-Sahara Africa: The Case of Ghana*. Paper presented at the RESEARCH QUARTERLY FOR EXERCISE AND SPORT.
- Songsore, J., & Denkabe, A. (1995). *Challenging Rural Poverty in Northern Ghana: The Case of the Upper-West Region*: University of Trondheim.
- Strauss, C. (1992). What makes Tony run? Schemas as motives reconsidered. In R. G. D'Andrade & C. Strauss (Eds.), *Human motives and cultural models* (pp. 197-224). Cambridge: Cambridge University Press.

- The United Nations Conference on Trade and Development [UNCTAD]. (2013). Shea marché. Retrieved from http://www.unctad.info/en/Infocomm/Agricultural_Products/Karite/Marche/
- Ubink, J. M., & Amanor, K. S. (2008). *Contesting land and custom in Ghana: State, chief and the citizen*. Leiden University Press.
- UNDP. (2011). *Evaluation of UNDP Contribution: Ghana*. Retrieved from New York:
- Wardell, A., & Fold, N. (2013). Globalisations in a nutshell: Historical perspectives on the changing governance of the shea commodity chain in northern Ghana. *International Journal of the Commons*, 7(2).
- World Bank. (2007). *World Development Report 2008. Agriculture for Development*. Retrieved from Washington D. C.:
- World Bank. (2009). *Awakening Africa's sleeping giant: prospects for commercial agriculture in the Guinea Savannah zone and beyond*. Washington D.C. : World Bank.
- Yaro, J. A. (2006). Is deagrarianisation real? A study of livelihood activities in rural northern Ghana. *Journal of Modern African Studies*, 44(1), 125.
- Yaro, J. A. (Ed.) (2013). *Rural development in northern Ghana*. New York: Nova Science.
- Yidana, J. A. (2004). Progress in developing technologies to domesticate the cultivation of Shea tree (*Vitellaria paradoxa* L.) in Ghana. *Agricultural and Food Sciences Journal of Ghana*, 3, 249-267.

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 Forschungsk Kooperation 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 Constraints 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 Ul 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 Ul 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.
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Authors: Wolfram Laube, Martha Awo, Emmanuel Derbile

Contacts: wlaube@uni-bonn.de; marthawo@yahoo.com;
derbile_uds@hotmail.com

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