

Impediments and innovations in knowledge sharing: the case of the African shea sector

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Introduction

This case study discusses difficulties of sharing knowledge in the African shea sector. Shea butter (French: *karité*) derives from the shea tree, *Vitellaria paradoxa* C.F. Gaertn., which grows in 18 countries within a 500-750 kilometre-wide and 5000 kilometre-long belt in Africa's Sudano-Sahelian region (Hall et al. 1996). *V. paradoxa* is the most prevalent arboreal species of West African parklands, which provide vital products and ecological services to the semi-arid region (Teklehaimanot 2004). The resource's main traditional role is associated with its oil (shea butter), extracted from shea kernels, that represents the primary source of fat in local diets (Lamien et al. 1996). Shea also contributes to the generation of crucial foreign exchange revenues in many countries of the sub-region, ranking third among exports from Burkina Faso in the 1980s (World Bank 1989). Global interest in the product stems from its use as a cocoa butter equivalent (CBE) in chocolate, and as a prized ingredient in the pharmaceutical and cosmetics industries.

For centuries, the collection and processing of nuts into butter in Africa has been carried out by women. While nut gathering and processing were formerly exclusively rural activities, many factors have led to the expansion of urban shea projects. These include the enlargement of the global shea market, and the onset of urbanization, which has led to the emergence of poor unemployed urban women (Compaoré 2000). Locating shea processing facilities and head offices in a city or a town offers proximity to donor agencies, and access to paved roads, electricity, storage, and export firms. Urban women are thus better able to take advantage of market information, technology transfers, training, and credit opportunities. As a result, many large shea cooperatives are now located in urban centres. For instance, the largest cooperative in Burkina Faso, *Songtaab-Yalgré*, has its head office in the country's capital, Ouagadougou. These cooperatives have disproportionately benefited from donor interventions (Elias and Carney 2005). Biquard (1992) forecasts that, unless rural-urban linkages are strengthened, there will be an eventual takeover of the export shea market by urban entrepreneurs at the expense of rural shea producers. She notes that if rural communities do not quickly develop the industry, businessmen and urban (male and female) dwellers will do so with assembly-line-type processing techniques. Female and male entrepreneurs already involved in purchasing surplus butter from rural producers not organized into shea associations are well placed to capture profits from growing international demand for the commodity (Biquard 1992)

Shea is one of the few products whose extraction, processing and commercialization are exclusively controlled by women, and its sales account for as much as 100% of rural female revenues in key producing countries such as Burkina Faso, Benin, and Ghana (Chalfin 2004). Advocates for gender equity, poverty reduction, and sustainable development are therefore pursuing increased global demand for shea butter to enhance the incomes of impoverished female producers. As a result, there has been a proliferation of shea projects sponsored by the United Nations Development Fund for Women (UNIFEM), the United Nations Development Program (UNDP), bilateral aid agencies and non-governmental organizations (NGOs), since the 1990s.

The shea trade is longstanding, and the limited scope and scale of the shea market prior to the late 20th Century encouraged direct information exchanges between producers and regional traders. This is no longer the case. Recognizing the commercial opportunities arising with shea, and the product's importance to West African households and national economies, the number of actors involved in some capacity in the shea commodity chain has mushroomed. These include rural and urban female shea producers, NGOs, researchers, government officials, aid agencies, local, regional and national merchants, as well as international (frequently multinational) companies. Each role player focuses on its respective area of concern, with social scientists researching the socio-economic aspects of the resource; scientists studying shea ecology and genetics; and most government and donor-led programmes focusing on the applied marketing and commercial aspects of the sector to promote exports. These groups represent different functional units (FUs), which operate in geographically distant localities and frequently suffer from a lack of coordination, synchrony and harmonization. Improved knowledge management across different components of the shea sector is now required to ensure that access to information is facilitated, and that the limited resources earmarked for the sector are adequately allocated.

This paper addresses some of the impediments to effective knowledge sharing in the shea sector. We begin by discussing some general impediments to knowledge sharing in Africa that bear upon the shea sector. We then detail the lack of a holistic vision shared by the sector's multiple role players of the shea commodity chain, and the effects this has had on developing and applying knowledge about the resource. We contend that an integrated development strategy is required to produce a commodity that meets international market demands and reaps associated financial benefits to African producers. Thereafter, vehicles of knowledge sharing are discussed, beginning with the role of NGOs in transferring crucial market information to small producers. The article concludes with a description of the *ProKarité* and the *Table Filière Karité* initiatives which aim to harmonize standards and coordinate the multiple role players involved in the shea sector.

General constraints to knowledge sharing in Africa

Knowledge management processes include knowledge creation and acquisition, knowledge transfer and sharing, knowledge application and utilisation, and knowledge storage (Shin et al. 2001). Each of these processes is hampered by the state of African libraries, poor infrastructure and inadequate information technology (IT) equipment, as well as a low level of literacy, among other drawbacks.

Knowledge acquisition and creation in Africa is further complicated by budgetary constraints, which translate into poorly stocked libraries and inadequate access to journals. The situation is so severe that the lack of access to published resources has been referred to as 'Africa's other famine' (Jimba and Atinmo 2000; Odedra et al. 1993, Sturges and Neill 2004). The inability to retrieve extant information represents a significant obstacle for subsequent knowledge production, and the rising cost of journals, particularly international ones, does little to ease this problem. As scientists frequently favour publishing in international journals, findings on sub-Saharan Africa are more accessible in other parts of the world than in Africa (Okunoye and Karsten 2003). It has been suggested that at as much as 90% of data pertaining to Africa is found in Western databases, far from where it is actually needed (Zwangobani 1987). Many other findings by African researchers are written up in unpublished reports that are not digitally indexed, making them difficult to discover, locate, and access. In fact, as publication costs can be prohibitively expensive, Africa accounts for merely 1% of the world's book production (Jimba and Atinmo 2000).

Internet use also remains problematic in many parts of Africa. Sub-Saharan Africa has the least developed telecommunications infrastructure in the world and five times fewer telephone lines than the average for low-income countries. Sahelian countries, many of which are shea butter producers, have as few as two phone lines per 1000 people versus 583 lines per 1000 people in high-income countries (Okunoye and Karsten 2003). Sending an e-mail or attachment can represent quite a feat due to unreliable and slow dial-up Internet connections, at times with entire institutions relying on a single phone line. Electricity represents an additional constraint, as its daily availability can be limited and the electrical network unreliable. As a result, the reach of the Internet remains restricted, and primarily the privilege of urban areas (Jensen 1999). In addition, computers in Sub-Saharan Africa are frequently obsolete and have low operating capacities. While poor telecommunications infrastructure raises Internet costs, employees may be expected to pay for Internet and e-mail use, even for work-related matters.

Finally, inexperienced IT staff and low computer literacy among the personnel further restrain the optimal use of Internet resources (Odedra et al. 1993). Due to these impediments, Odedra et al. (1993) have termed Africa a 'technical desert' and 'the "lost continent" of information technology.' Nor does the situation seem to be improving. In his study on the continent's 'e-readiness,' Ifinedo (2005) reports that sub-Saharan Africa significantly lags in its transition into the networked economy. Knowledge sharing in the

shea sector in Africa indeed suffers from some these constraints, and important gaps exist in knowledge about the product.

Knowledge gaps and the need for an integrated development approach

Development of the shea sector has further been hindered by the lack of a unified and holistic view of the shea commodity chain, which spans from the initial resource base (the tree) to the point of final product consumption. This lack of vision both stems from inadequate knowledge sharing across FUs working with shea, and reinforces the isolation within which these FUs operate. Table 1 outlines some of the impediments to knowledge sharing across the shea sector's FUs.

Table 1: Impediments and innovations for knowledge sharing between the functional units

Functional Unit	Impediments to KS	Innovations for KS
Rural and urban female shea producers	<ul style="list-style-type: none"> ▪ Few opportunities to meet with producers from other associations. ▪ Poor infrastructure in rural areas complicates exchange of goods and information. ▪ Little opportunity to communicate with donors and government officials. ▪ Market information is hard to access, particularly for illiterate rural women. 	<ul style="list-style-type: none"> ▪ NGOs provide capacity-building assistance and market information to producers. ▪ NGOs act as 'go-between' producer associations. ▪ Producer cooperative certification increases their visibility. ▪ NGO-led literacy-training programs improve the literacy of rural actors.
NGOs	<ul style="list-style-type: none"> ▪ Fail to exchange project information with government. ▪ Competitive knowledge hoarding culture such that inter-NGO communication is limited. ▪ Reluctance to describe project difficulties. ▪ Lack of holistic view of the shea commodity chain hinders integrated development approach. ▪ Short-term funding does not encourage long-term vision. ▪ Not rewarded for staying afloat of scientific findings in the shea sector. ▪ Little access to published sources, poor infrastructure, inadequate IT equipment. 	<ul style="list-style-type: none"> ▪ Play key role in transferring market information to producers. ▪ Successfully shortened chain of middle traders. ▪ Facilitate knowledge sharing between cooperatives. ▪ Convey information on shea suppliers to importers.
Researchers: biologists	<ul style="list-style-type: none"> ▪ Limited funding available. ▪ Importance of their research is under-recognized among other actors in the shea sector. ▪ Scientific jargon and language of publication (English) make findings difficult to communicate to non-scientists regionally. 	<ul style="list-style-type: none"> ▪ ProKarité central database of biophysical shea tree attributes. ▪ ProKarité-organized network conferences.

	<ul style="list-style-type: none"> Local publications not indexed and inaccessible elsewhere. State of African libraries, poor infrastructure, inadequate IT equipment. 	
Researchers: social scientists	<ul style="list-style-type: none"> Lack of holistic view of the shea commodity chain hinders integrated development approach. State of African libraries, poor infrastructure, inadequate IT equipment. 	<ul style="list-style-type: none"> ProKarité-organized network conferences.
Government officials	<ul style="list-style-type: none"> Fail to exchange project information with NGOs. Lack of holistic view of the shea commodity chain hinders integrated development approach. Not rewarded for staying afloat of scientific findings in the shea sector. Documents and personnel are split between different ministries and locales. No database of government documents or publicly available list of resource people. Little access to published sources, poor infrastructure, inadequate IT equipment. Little coordination between countries. 	<ul style="list-style-type: none"> Convey marketing and commercial information to producers and importers upon demand.
Aid agencies	<ul style="list-style-type: none"> Lack of holistic view of the shea commodity chain hinders integrated development approach. Funding structure renders NGOs competitive rather than cooperative, thereby diminishing knowledge sharing incentives. 	<ul style="list-style-type: none"> Fund NGOs in the shea sector, including those whose mission is to create knowledge networks.
Local, regional, and national merchants	<ul style="list-style-type: none"> Compete for markets. Poor communication infrastructure in Africa. Lack production statistics 	<ul style="list-style-type: none"> List of shea suppliers on TFK website. NGOs provide information on shea suppliers to local merchants. ProKarité and TFK facilitate access to market information. TFK participation in regional events increases supplier visibility.
International/multinational companies	<ul style="list-style-type: none"> Secretive market. Limited information about the shea market available on the Internet. Poor communication infrastructure in Africa limits international business exchanges. Lack production statistics. 	<ul style="list-style-type: none"> List of shea suppliers on TFK website. NGOs provide information on shea suppliers to importers and on international standards to producers. Producer certification increases their international visibility. TFK participation in international events increases supplier visibility.

Each FU scarcely draws upon and applies work on shea performed in other fields. In particular, the importance of considering the ecological aspects of shea is frequently downplayed among public and private shea ‘consultants.’ For many practitioners, including government officials, NGOs and other aid organizations personnel, the shea nut is considered the starting point of the shea commodity chain. In contrast, scientists stress the importance of considering the tree as an integral part of the chain, and underscore that focusing on *V. paradoxa* conservation is indispensable to the continued existence of the commodity chain (Bonkougou 2005). In addition, they emphasize that failing to study the species leaves the possibility of ameliorating its genetic characteristics, and derived butter traits, untapped (Bayala 2005). They contend that if producing countries continue to rely entirely on wild trees, which are not planted but are preserved, the unstable nut supply from a tree base of variable quality will hinder butter yields and characteristics (Bonkougou 2005). Additionally, the wild nature of the species does not allow the actors to forecast and/or generate accurate statistics on the productivity of shea trees and the quantities of shea derivatives produced. The scientific community’s overarching goals are thus to promote effective, locally driven shea conservation measures, to enhance silvicultural practices, and to accelerate *V. paradoxa* domestication and improvement.

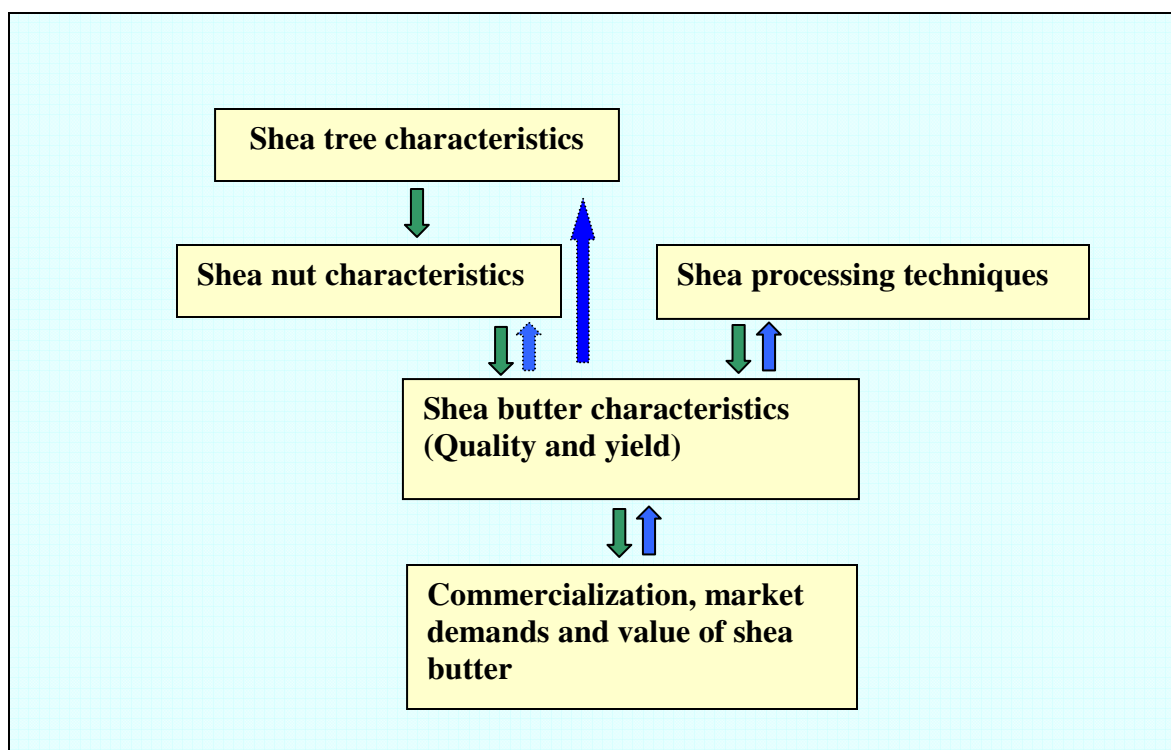
The lack of attention to these concerns in the rest of the shea community has hindered the application of extant scientific knowledge about the resource. In addition, meagre funding opportunities in the scientific domain continue to under-nourish the field and impede advances in the state of knowledge of the shea tree. This is problematic because, as the following explanation demonstrates, the development and application of this knowledge can improve the final product value reaped by producers.

Shea butter quality is a function of both the processing techniques used, and shea nut characteristics which largely reflect tree and nut genetics (Maranz and Wiesman 2003, Bonkougou 2005). Producers must meet strict quality standards if they are to secure value-added butter making activities rather than loosing out to Western processing plants. In addition, the production of high quality butter can raise price of the commodity. To tap into global shea markets, producers have thus altered their nut selection and transformation methods (Figure 1). As a result, some producer associations have been able to generate superior-quality butter, and to secure contracts with major cosmetics firms such as *L’Occitane* or The Body Shop (Elias and Carney 2005). In this respect, international quality standards have prompted changes in shea-processing techniques. While efforts to increase the performance of the shea sector have emphasized this processing aspect, significantly less attention has focused on improving the genetic features of the actual resource base (shea nuts and trees) to ameliorate butter quality.

In the light of the foregoing, it is evident that the shea sector requires an integrated sectoral framework encompassing all stages of the commodity chain (Casadei 2005). Cash crops such as coffee, cotton, and cocoa have benefited from integrated development efforts, within which substantial investments were made to improve crop genetics, develop appropriate farming systems and related agricultural and commercial extension activities. Since 1999, a wide body of research on cocoa has confirmed that such

investments in agricultural efficiency have a multiplier effect in terms of reducing poverty and affording rural peoples' opportunities and choices (Shapiro and Rosenquist 2004). Integrating scientific knowledge about the resource into programmes seeking to ameliorate and increase exports would favour butter yield and quality improvements, increase product value, and help secure the long-term sustainability of shea projects.

Figure 1: Feedback between determinants of shea butter characteristics and value



Impediments to knowledge sharing within and across functional units

Despite funding constraints, the last decade has witnessed some initiatives (albeit isolated and limited in scale) engaging in genetic characterization of shea and improved horticultural techniques. A recent EN/INCO-supported project on Improved Management of Agroforestry Parkland Systems in Africa (1998-2003) has generated data on resource and management issues pertaining to shea through applied research in Uganda, Burkina Faso, Mali and Nigeria (Teklehaimanot 2004). The main results of the project have been published in a special issue of *Agroforestry Systems* (Volume 60) and in other scientific journals. Results achieved in this project should be consolidated and research efforts sustained.

Yet, numerous barriers hinder communication of these findings to non-scientists working in the shea sector. Constraints include the fact that NGO personnel and government officials do not generally read scientific journals. To begin with, they typically lack

access to these sources. In addition, the articles themselves may remain inaccessible to them as they are often written in foreign languages (regularly in English while French is more prevalently spoken in many West African shea producing-countries) and in scientific jargon. For instance, when searching scirus.com for French articles on shea (using keyword *karité*), 661 total hits are rendered, comprising 27 journal results, 132 preferred web results, 502 other web results, while 3,285 total hits are rendered in English with shea nut: 171 journal results, 455 preferred web results, and 2,659 other web results. Moreover, practitioners lack the time to invest in researching scientific findings about shea, and are also not rewarded for this. While long-term concerns of resource conservation and improvement are indispensable to the shea sector, pressing short-term issues, such as assisting producers in meeting production deadlines, take precedence. Finally, the short-term funding most projects receive from donors (commonly ensuring no more than four years of funding at one time) does not favour the adoption of a long-term vision including improvements in shea genetics, which are slow to materialize (Table 1).

Knowledge sharing about shea is also rare across other FUs. Government officials and the NGO community rarely exchange information about their respective shea projects. Knowledge is mainly transmitted in a unidirectional fashion from donors and government officials to producers rather than being 'shared' between them. This occurrence has also been reported in many other development interventions (King and McGrath 2003). Regrettably, this undervalues knowledge shea production and management producers have inherited and developed across the generations (Chalfin 2004, Elias and Carney 2005).

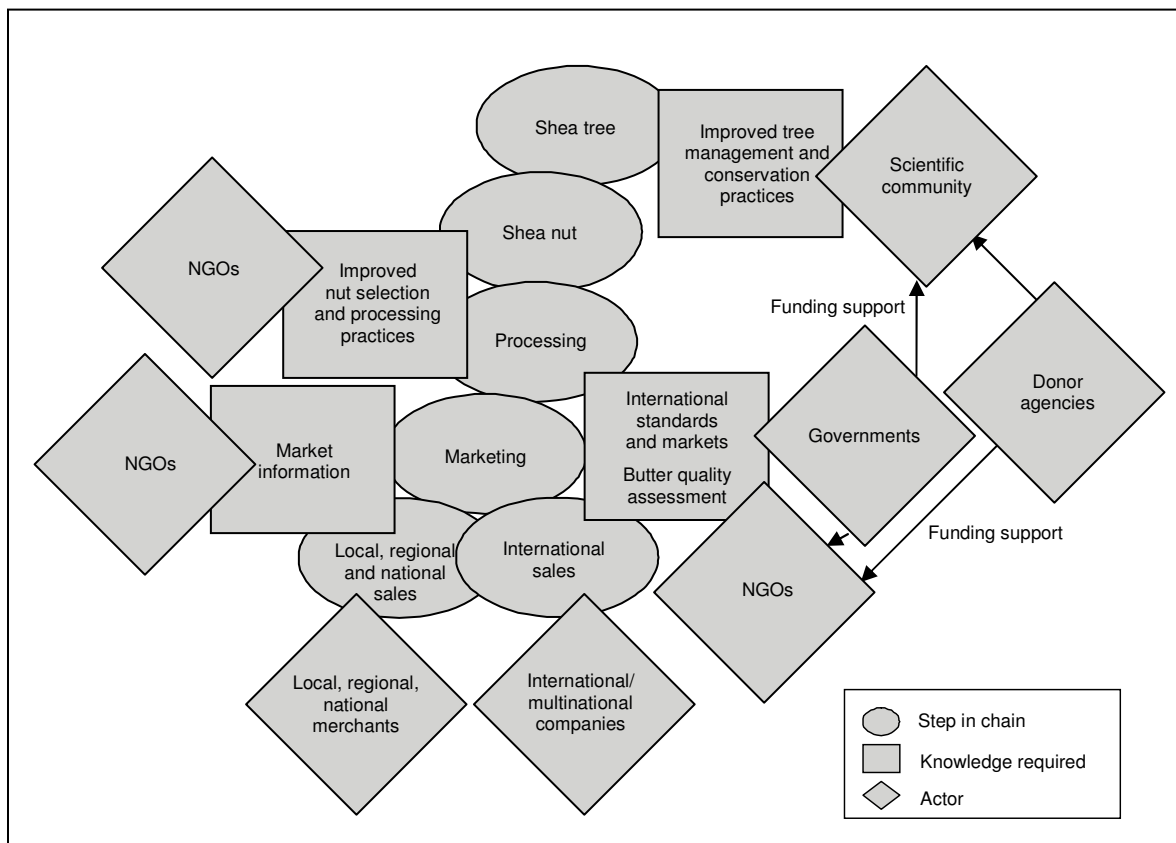
Knowledge sharing also proves difficult within shea FUs. For instance, while there are a handful of NGOs assisting shea producer associations in various regions, communication between these institutions remains limited. The same donor (for instance, the Canadian International Development Agency) frequently funds various NGOs that operate in parallel rather than cooperatively. Resources are not optimally allocated in this fashion, as poor coordination between NGOs leads them to constantly reinvent the wheel rather than learning from each other's practices (Swan et al. 1999). This owes in no small part to the culture of knowledge hoarding between organizations, which perceive each other as competitors for limited funds rather than collaborators towards a common cause (Alavi and Leidner 2001). When reports are shared between NGOs, their content frequently fails to accurately reveal project difficulties, as NGOs are reluctant to describe project shortcomings for fear of losing funding. The information provided in their reports reflects the organization's need to achieve positive results, and thus fails to forewarn readers about potential project weaknesses.

Government programmes pertaining to shea are equally poorly coordinated. For instance, when seeking socio-economic information on shea in Burkina Faso, one is directed to the *Ministère de la Promotion de la Femme* (Ministry for the Promotion of Women). The Ministry's programmes are divided into various offices, and the researcher can be referred back and forth between these offices for the sought information. The lack of a central database indexing government documents and of a publicly accessible repertoire

of resource people and their respective positions hinders knowledge sharing within and across government branches.

To date, there has additionally been little cooperation between governments of shea producing countries to develop the shea sector. This may partly owe to the fact that some of the producing countries are also cocoa producers, and that shea butter competes with cocoa (as a cocoa butter substitute in chocolates) on the international market. In these countries, the cocoa sector bears greater political clout and economic value than shea (Chalfin 2004). The current expansion of shea products into non-chocolate niches may encourage cross-country collaboration in developing the shea sector and favour the success of a regional shea committee.

Figure 2: Shea butter commodity chain: knowledge requirements of the producer



Vehicles for knowledge sharing: the role of NGOs

Despite these drawbacks, there have been successes in sharing knowledge of shea in Africa, largely due to NGO interventions. NGO involvement has been especially significant in sub-Saharan Africa since the International Monetary Fund-mandated

Structural Adjustment Programmes (SAPs) in the early-1980s. Prior to structural adjustments, many shea-producing countries had coordinated their shea sector, as well as those of other export crops, via a state marketing board. The latter maintained a monopoly on shea exports and provided price guarantees and subsidies to farmers, thus buffering them against international fluctuations. These boards also promoted the marketing of shea products. When SAPs curtailed the state's role and expenditures believed to impede economic restructuring, state marketing boards became casualties of SAP reforms (Jackson and Pearson 1998). The boards' demise resulted in insecure market delivery and remuneration for shea producers. In West African countries such as Burkina Faso, shea commercialization became increasingly informal, disorganized and unprofessional (Compaoré 2000). Concurrently, growing demand for shea in natural cosmetics opened the door to the private sector and to global corporate expansion. NGOs stepped in to bridge the gaps left by shrinking government infrastructure to help producers seize new market opportunities and maximize their revenues.

Since the 1990s, NGOs have greatly contributed to the development of shea cooperatives and markets. NGO projects have focused on capacity building among shea producer groups, and promoted standardized processing techniques for the production and sale of high quality butter. In some cases, they have facilitated the introduction of new technologies designed to facilitate butter making and standardize the production process. However, many technology transfers have met with mitigated success in West Africa due to the relative complexity and level of inputs required by the technologies developed (Teklehaimanot 2004).

In addition, these organizations have conveyed key information on niche markets and their requirements to producers (Figure 2). This information is critical for allowing producers to manage their production and processing operations in ways that address the stringent standards of international buyers. NGOs have also played a central role in finding global outlets for shea butter and brokering direct trading relationships between distant cosmetics companies and shea producers. According to Becker and Statz (2003), shea products typically change hands 16 times before reaching the final consumer in Europe. To improve income to farmers, NGOs have managed to shorten this chain of middle traders by brokering direct trade relations between shea producers and international importers willing to pay women above-market prices for their product (Elias and Carney 2005). They are additionally promoting the product locally and nationally (Teklehaimanot 2004). As the outcome of agroforestry innovations are governed by the market value of harvested tree derivatives, these transfers of knowledge and commercial initiatives, leading to increased producer revenue, are central to the success of shea projects (Russell and Franzel 2004).

In general, producer associations operate in quasi-isolation from one another. Groups are geographically separated, and even within a given cooperative, members are often dispersed in different, though sometimes neighbouring villages. Even so, the distances separating them complicate group meetings as women often travel these distances by foot. In addition, not all shea producers are able to travel far for work purposes as it may prevent them from completing other household and agricultural tasks, or cause them to go

against their husband's will. NGO members therefore play an important role providing linkages between different associations and reporting on producers' best practices during training sessions. In addition, they have facilitated inter-cooperative exchanges by covering the costs involved in sending cooperative representatives to training sessions when possible. The lasting culture of solidarity between shea producers, and the pride women take in their work has rendered these exchanges fruitful, regardless of competition for limited niche markets by cooperatives. Therefore, the role of NGOs in the transmission of market information to rural cooperatives cannot be overemphasized. Rural producer cooperatives must however overcome other significant drawbacks such as illiteracy. Their reliance on private entrepreneurs to purchase, transport, and market shea can result in lower producer prices and greater uncertainty in getting the product to international markets. NGOs have often facilitated these issues. Their role must therefore be sustained. Sufficient resources must also be allocated to rural producers, who have little else in the way of local industries and economic opportunities.

Towards coordination: ProKarité and the *Table Filière Karité*

Shea butter is the most important agroforestry product in semi-arid West Africa. It thus requires concerted interventions from stakeholders throughout its distribution zone to promote the product globally (Casadei 2005). While NGOs play an indispensable role in assisting shea producers, their reach however remains restricted. Due to limited resources, many producers do not benefit from NGO interventions. They are thus left unassisted, and lack access to the crucial information and training required to integrate into the international market. This calls for establishment of permanent mechanisms facilitating market information and services which would provide a crucial resource for all producers. Driven by an integrated planning strategy, such an agency should endow the shea sector with a clear force and momentum. It should facilitate free and public access to information on shea standards and markets, thereby reducing the risk of market domination by a small number of large producers. It should also remedy the shortage of programmes developed to specifically address the specialized and differing product requirements for shea butters supplied to the pharmaceutical, cosmetics, and agro-food industries (Russell and Franzel 2004, Bonkoungou 2005). Each of these industries has strict and specific quality standards for shea butter.

ProKarité, a project sponsored by the Common Fund for Commodities (CFC), the Dutch government, and the Food and Agriculture Organization (FAO), is one such budding organization operating in four countries of West Africa. Initiated in 2004, it represents the culmination of work by an informal group of institutions in the Shea Network, collaborating to ameliorate shea product quality and remuneration to primary producers throughout the shea zone. Implemented by the World Agroforestry Centre (ICRAF), ProKarité aims to establish national and regional shea quality standards, establish a common front to defend the interests of shea producers, and favour the exchange of market information at the national, regional and international levels (CFC 2003).

The programme's research and development component seeks to harmonize regional product standards and quality control marks. ProKarité intends to initiate a market driven system whereby each quality standard defined corresponds to a distinct market niche (Russell and Franzel 2004, Casadei 2005). Quality criteria and standard testing methods applicable to specialized African laboratories will be elaborated. In parallel, field criteria that can be accurately measured at the village level to assess product quality as close to origin as possible will be defined. A bonus pricing structure has been suggested for commercial contracts, whereby the selling price of products increases along with product quality above a specified minimum (Casadei 2005). The project intends to extend its results to other producing countries within the shea distribution range.

ProKarité has also begun compiling a central database detailing the physical attributes of shea samples collected throughout the shea zone. The data provided has been contributed by researchers working on shea in various shea-producing countries and is freely accessible on the main project website (<http://www.prokarite.org/index-eng.html>). In this sense, the initiative has fostered a knowledge sharing network which represents a promising way forward in terms of knowledge management. To date, this massive collaborative effort has allowed for the compilation of data on over 700 shea tree specimens. The project has also been successful in bringing together scientists working on shea throughout the Sudano-Sahelian region through conferences and workshops.

In addition to defining product quality standards, ProKarité intends to begin certifying shea products according to origin and characteristics (CFC 2003). Certification, as defined by Codex Alimentarius, is the process by which officially recognized certifying agencies provide written or equivalent corroboration that foods or food control systems conform to set criteria (Casadei 2005). Certified products can reap greater prices by inspiring confidence with respect to their credibility and quality. Certified associations also gain exposure by figuring in the records of certifying agencies. This increases their chances of being contacted directly by international buyers. The project's efforts to define a harmonized information system, which couples certification with the aforementioned bonus pricing structure for high quality products, holds promise for producers.

ProKarité follows an earlier national endeavour developed in Burkina Faso. Initiated in 2000, the *Table Filière Karité* (TFK) represents a network of actors involved in the shea sector including producers, transformers (of butter into a range of subsidiary products), and distributors. Organized under the tutelage of an NGO, the *Projet d'appui aux filières bio-alimentaires* (PAF), the TFK is run by a steering committee and participating members. The network aims to promote the marketing and commercialization of shea products, provide exposure and representation to shea suppliers, and favour their direct linkages with buyers. The compilation of a comprehensive and freely accessible list of shea suppliers on the TFK's Internet site (<http://www.tablefilierekarite.bf/index.php>) as well as TFK participation in national and international events serve towards this end. The TFK has managed to bring different Burkinabé actors of the shea sector together to exchange ideas and engage in concerted marketing actions.

The TFK and Pro*Karité* can be considered complementary endeavours in their attempt to promote and coordinate the shea sector in Burkina Faso. The projects have respective fields of expertise, and coupled they encompass the main facets of the shea sector. While the TFK works with suppliers towards shea marketing, Pro*Karité* focuses on physical product attributes. Unfortunately, there remains a lack of integration between these networks. Thus, while the projects represent a step in the right direction, the need to devise an overarching vision of the shea sector favouring integration of these initiatives at various scales remains.

Conclusion

In conclusion, poor communication and networking between shea producers and other stakeholders throughout the African shea zone persists. Constraints to sharing knowledge about shea are numerous, and comprise the lack of global vision of the shea sector, key knowledge gaps, geographical distance, infrastructure and budgetary considerations, as well as socio-cultural barriers to knowledge sharing between organizations. Despite these hurdles, efforts to overcome the disorganization of the sector and to optimize benefits to primary producers and rural processors have been undertaken. Examples include recent projects to create a regional harmonized information system with respect to international shea standards, and a national network of shea suppliers in Burkina Faso. While these initiatives presently operate in isolation, it is hoped that the formulation of an overarching vision of the shea commodity chain will promote their integration. Effective knowledge sharing in the shea sector would encourage the application of extant knowledge about the resource and generate new knowledge through the cross-fertilization of ideas. In turn, this would favour the optimal development and long-term sustainability of this key nutritional and economic resource.

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Acknowledgements

We would like to thank an anonymous reviewer for his/her comments on the manuscript.

Abstract

The shea tree (*Vitellaria paradoxa* Gaertn C.F.) is crucial to Soudano-Sahelian peoples and ecosystems. Shea nuts and oil (shea butter) are also one of the few regional commodities whose extraction, processing and commercialization are under the control of women. Owing to the species' key nutritional, medicinal, economic, ecological and cultural functions, shea has drawn the interest of researchers and advocates for gender equity and sustainable development, who have focused on growing global markets for shea butter to enhance the incomes of impoverished rural women. The result has been a proliferation of shea 'development projects,' sponsored by governmental, non-governmental (NGOs) and multilateral institutions. To date, activities pertaining to shea have been characterized by a lack of coordination and of knowledge sharing. Consequently, the multiple role players in the shea sector have had limited access to a wealth of extant knowledge concerning the resource. This paper addresses the main impediments to the transmission of knowledge about shea across the 5000-kilometre shea belt, as well as the role of NGOs in facilitating global market information to shea producers. The efforts of the recently established ProKarité project and of the *Table Filière Karité* in harmonizing shea-related activities and promoting the species' valorization are discussed.

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