# Origin Products from African Forests: A Kenyan Pathway to Prosperity and Green Inclusive Growth?

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# Abstract

Many tropical countries have untapped potential for creating additional market value for unique forest origin products (OPs) in a fashion similar to how the EU gain billions of Euros annually from some of its mainly agricultural origin products, registered with Protected Denomination of Origin (PDO) or Protected Geographical Indication (PGI). Following a description of the renaissance of the global GI regime, this paper provides a set of case-studies from Kenya - on Mwingi Honey and Kakamega Silk - presenting the natural, cultural and institutional conditions under which producers of African forest origin products may incorporate territory specific cultural, environmental and social qualities into their unique products. Through the case studies we investigate prospects for Kenyan producers to create value addition for forest related origin products, allowing smallholders to build livelihood and monetary value, while stewarding natural environments and resources. Using interviews with various actors in the value chain as well as state authorities, the origin products are investigated for their potential for protection with a geographical indication (GI) based on product specificity and reputation, social ties among producers, the human link to quality through culture unique production systems, the natural link between the products and their origin, and policies and regulations facilitating or hindering GI recognition. Our study shows that both Mwingi Honey and Kakamega Silk have potential for registration under a GI regime based mainly on the natural link to product quality and product specificity. The institutional environment presents the main challenges for the development of GI products and markets, exemplified by the Kenyan GI bill which is not yet enacted the wider institutional environment support.

Keywords: Geographical Indications, Forest products, Honey, Wild Silk, Kenya.

# Introduction

Origin products, i.e. products with specific quality traits attributed to their geographical origin, from forests and other unmanaged areas can create substantial monetary values to households in rural areas in developing countries, provided the origin qualities can be protected and marketed under registered product labels. One such opportunity is afforded by Geographical Indication (GI), which originates from the French concept *terroir* and is based on the link between a product and a geographical and human environment. GI is a special type of

intellectual property right, recognized by the World Trade Organization in 1994, which reflects the monetary value of cultural and social qualities of a particular production landscape, including it's shaping by producers, i.e. local landscape custodians (Douguet and O'Connor 2003). Some of the most famous GI products include Tequila, Parmigiano-Reggiano cheese, Darjeeling tea and Champagne. Having added billions of Euro worth of monetary value to an exclusive selection of high quality European food products, the current renaissance for GI products (Egelyng et al. 2015) provides the global south with both challenges and opportunities, translating into a second chance for nations not already benefitting from GIs as economic policy instruments and institutional vehicle for rural development. Grounded in development studies and drawing on recent studies of the global regime for geographical indications, this paper investigates two forest products in Kenya - Kakamega Forest Silk and Mwingi Honey – and draw out options for countries and stakeholders to use the international GI regime to pursue among them a virtuous circle of sustainable development of forest communities and livelihoods, of the kind theoretically envisioned by proponents of GIs. The case studies aim to illustrate why and how introduction of GIs may be expected to positively impact even biodiversity in Kenya – and whether the assumptions these expectations are based on are plausible, also with regard to livelihood. The paper concludes the analysis summing up challenges and presenting an agenda for development researchers and agencies to identify and overcome institutional, technical and other barriers for stakeholders facing the challenges of globalization and wishing to adopt geographical indications in their struggle for local livelihoods and sustainable rural development.

### Theoretical framework

Often confused with brands and trademarks, GIs are quite opposite; where brands and trademarks provide for individual legal entities, GIs are collectively owned and aim to protect collective values and public goods (Augustin-Jean, Jiang and Saavedra-Rivano 2012, 112). Where, from an ecological economics perspective, application of the Fordist industrial model to agriculture has perhaps de-valorized many a cultural and natural landscape, GIs represent a theoretical promise of re-valorizing such landscapes, the realization of which is however challenged by many institutional factors. According to McIntyre et al. (2009), GIs can be seen as economic policy instruments for sustainable development. The wider implementation of geographical indications in the global South is expected to impact conservation of culturally and environmentally important

landscapes and biodiversity<sup>i</sup>, traditional knowledge and handicrafts, consumer and producer alliances favoring shorter value chains, redistribution of value added, and food sovereignty<sup>1</sup> (Dagne 2015, Ilbert 2012).

The development of institutional and policy environments for valorization of origin products via GIs can be theoretically explained by the special nature of food markets (Steiner 2012), the multidimensionality of food quality (Allaire 2012) and arrival of the modern 'quality turn' consumer, for which food origin provides identity and 'consumer power' articulated as 'market preference' for specialty products; all factors which in some cases have existed for centuries and in some cases have emerged or re-emerged recently.

An analysis of the concrete potential of any origin product to be registered under a geographical indications regime, such as the EU quality regime, may be structured on the basis on requirements listed in existing legislation and GI registrations of products. Figure 1 shows the major elements of GI potential, identified through a review of PGI or PDO products registered in the EU DOOR database, case studies of GI products outside the EU, and the FAO/SINER-GI report 'Linking People, Places and Products' (Vandecandelaere et al. 2010).



Figure 1. The five major elements of GI potential.

<sup>&</sup>lt;sup>1</sup> The concept of food sovereignty 'speaks to the right of states to maintain and develop their own capacity to produce their basic foods, respecting cultural and productive diversity' and is a 'precondition to genuine food security' (Dagne 2015, 81)

In Figure 1, GI potential is made up of i) the natural link, i.e. the natural setting, environmental and climatic conditions etc. of the area of production which affects (or is believed to affect) the quality attributes of the product; ii) the human link, i.e. the cultural environment, cultural heritage, traditions and history, and local know-how that affects the product, e.g. though certain production and processing activities; iii) social ties, such as trust and cooperation among producers, and collective efforts found in cooperative or other types of producer associations and groups; iv) reputation and specificity of the product, linking consumer awareness of the product to its specific quality and characteristics, which is an important prerequisite for GI success; and v) institutions, which refer to formal and informal rules governing the production and marketing of the product, and is affected by the presence of local NGOs, state authorities issuing regulations, extension officers, research bodies etc. Together, the natural and human links refer broadly to the French concept of *terroir* that is based on 'place and people' resulting in tangible and intangible product quality attributes that cannot be reproduced outside the original area (Manzini 2013).

As shown by a wealth of European studies and most lately perhaps by Filoche and Pinton (2014) in the case of Brazilian guanará, the conditions for appropriation and use of an origin product is an institutionally complex matter, with many stakeholders, legal plurality and political and economic circumstances often favoring actors committed to strategies of so-called agricultural modernization and industrial processing, within global value chains, compared to actors committed to 'ecologization' of agriculture and proliferation of instruments (fair trade, organic certification and geographical indications) aiming for redistributing value from existing value chains or diversifying production and markets through shorter value chains. The assessment of the GI element of institutions may be structured as an analysis of the broader institutional environment, presenting barriers, challenges and opportunities for a geographical indication to succeed in a given nation or case. Institutional theory is core to such an approach. While developed in the different context of organic product certification, an example of such a broader institutional approach can be found in Egelyng et al. (2013), providing an analytical framework for analyzing the institutional environment for certified organic product on displaying five dimensions: i) overall policies, ii) regulation – in particular conformity assessment systems; iii) research, education and extension that targets COA; iv) agency and roles of the private sector and Civil Society Organizations (CSOS); and v) a broader contextual analysis. For this paper, the focus is mainly on 1) and iv).

#### The GI Renaissance - a New Global Regime for Geographical Indications has emerged

The milestone for the new international GI regime is after 1992, when EU created its mechanisms for registration of Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) within the European Union and after 1995, when the WTO gave its 154 member states a single definition of GIs (article 22.1). Geographical indication, as a concept, traces much further back. The academic literature often traces *terroir* or origin labelled products back in history to ancient Egypt and Greece, before also mentioning France and China; a 1915 international exposition gold medal winning product originating from Zhejiang province in South East China, tracing its history a thousand years back (Guihong 2012). Similarly, an international GI regime goes back to the Paris Convention for the Protection of Industrial Property (1883) and Madrid agreement for the Repression of False or Deceptive Indications of Source on Goods (1891).

Agricultural development is at a crossroads globally and choosing agricultural institutional pathways is an imperative (Izac et al. 2009). It is not only that achieving food sovereignty without seriously compromising critically important ecosystem services remains a global concern (Grafton et al. 2015); and not only that the World Bank already called for a "visible hand" to create "markets for environmental services" (World Bank 2007). It is also that Africa is calling for EU to allow it exploit markets for origin products (African Union and European Commission 2011). In November 2012, the African Regional Intellectual Property Organization (ARIPO) and the European Commission signed a cooperation agreement to improve the legal protection of traditional agricultural products in Africa (ARIPO and EU 2012). In 2013, Oku White Honey and Penja pepper from Cameroon and Ziama-Macenta coffee from Guinea were the first three African food products to be awarded PGI by the African Organization of Intellectual Property (OAPI), displayed at the Paris International Agricultural Show the same year. This renaissance is a major reason why additional and renewed 'global' research on Gls is highly relevant, also in the context of forest communities.

The basis for a renaissance for the international GI regime was laid when the rift between the new world (Americas, Australia & New Zealand) and the old world (EU) culminated and led the EU to adopt a new council regulation (510/2006 and 1898/2006). This move opened up the EU GI system to all countries: a move making the European GI regime far more compatible with WTO rules, consequently strengthening its position as an international regime, *sensu* Krasner (1983), and replaced Josling's (2006) 'transatlantic war on terroir' with a new international GI regime of more constructive competition. A remarkable result is the increasing number of products with PGI registered in Europe, by countries in the global South (mainly Asia though), since 2012 (see

Table 1). Another is the institution of AU-EU collaboration on promoting GIs in Africa (AU-EC 2012), including initiatives such as the 'Power of Origin' conference in Uganda 2011. As it already happened with the globalization of the market for certified organic products (Egelyng et al. 2013 and Egelyng 2007), African producers of origin products can be expected to catch up with global trends, following the general trend of an increasing number of countries with affluent consumers demanding high quality food products with specific attributes in terms of culture and means of production.

Table 1. List of recent GI products from the global South. The list contains products registered in the EU DOOR database, a number of African GI products, and a few identified forest products with GI status or described GI potential. The list is not meant to be exhaustive.

Country	Product	Primary registration	EU DOOR registration
Cameroon	Penja pepper	OAPI	
	Oku honey	OAPI	
Guinea	Ziama-Macenta coffee	OAPI	
Morocco	Argane oil	Morroco GI Law	✓ Applied
China	Asparagus Dongshan Bai Lu Sun	China AQSIQ	✓ Registered
	Peach Pinggu Da Tao	China AQSIQ	✓ Registered
	Crayfish Yancheng Long Xia	China AQSIQ	✓ Registered
	Rice vinegar Zhenjiang Xiang Cu	China AQSIQ	✓ Registered
	inxiang Da Suan Garlic	China AQSIQ	✓ Registered
	Green Tea Longjing cha	China AQSIQ	✓ Registered
	Pomelo Guanxi Mi You	China AQSIQ	✓ Registered
	Apple Shaanxi Ping Guo	China AQSIQ	✓ Registered
	Yam Lixian Ma Shan Yao	China AQSIQ	✓ Registered
	Pasta Longkou Fen Si	China AQSIQ	✓ Registered
India	Kangra Tea	India GI Act	✓ Applied
	Darjeeling Tea	India GI Act	✓ Registered
	Nilambur Teak	In process	
	Number of handicrafts	India GI Act	
Thailand	Coffee Kafae Doi Chaang	Thailand GI Act	✓ Registered
	Coffee Kafae Doi Tung	Thailand GI Act	✓ Registered
	Rice Sangyod Muang Phatthalung	Thailand GI Act	✓ Applied
	Rice Mali Thung Kula Rong-Hai	Thailand GI Act	✓ Registered
Phillippines	Ifugao Rice	Philippines	
Vietnam	Phú Quốc Fish Sauce	Vietnam IP Law	✓ Registered
Indonesia	Javanese Teak	None yet	
Gabon	Okoumé timber	None yet	
Ethiopia	Coffee, Harrar/Sidamo/Yergacheffe	Ethiopian IP Office <sup>a</sup>	
	Wild Forest Coffee	None yet	
Benin	Shea Butter	None yet	
Peru	Pisco	Peru Industrial Property Law	
Colombia	Coffe café de Colombia	Colombian laws	✓ Registered
	Number of handicrafts	Colombian laws	
Brazil	Wine Vale dos Vinhedos	Brazil Industrial Property Law	

AQSIQ: The Chinese General Administration of Quality Supervision, Inspection and Quarantine

OAPI: African Organization of Intellectual Property

<sup>a</sup> Still formally registered as Trademarks, but in practice regarded as GIs.

Table 1 lists a number of GI registered products in the global South, as well as a few forest products that have been proposed as potential GI products. Outside Asia, only a few products have been registered by the EU. The list contains not only food products, but also handicrafts. The EU only recently started the discussion on whether to extend GI protection beyond food and drinks, and include products like Scottish tartans (Press release Brussels/Strasbourg, 15 July 2014). Contrary, countries such as China, India and Colombia have developed GI regimes that also recognize handicrafts, garments and other non-foodstuffs; hats, potteries, woodcarvings, ornamental flowers, traditional medicine, tobacco etc.

African products are underrepresented among the world's GI products, as also indicated in Table 1, even though many African have had legal regimes for GI protection of products for a number of years and many being active in either OAPI or ARIPO. The Quakers UN office lists 47 African countries with GI regimes in 2007, 23 of which have specific GI protection laws while the remaining operates under trademark laws (Musungu, 2008). With the legislative frameworks being further developed across Africa and the Second Decade of CAADP (2015-2025) being a likely influential force on this development, opportunities arise for tapping into the vast GI product potential that undoubtedly is 'hidden' in the diverse cultural and natural environments of Africa. This can very well lead to a large increase in African GI products and regional GI markets. A number of products like Kalahari Melon Seed Oil, Madagascan Vanilla, Mauritius Demerara Sugar, Safran from Taliouine (Morocco), Shea butter from the Massi plateau (Burkina Faso), Sidamo coffee (Ethiopia), and Zanzibar Cloves (Tanzania).

## Forest origin products and new opportunities for rural livelihoods

Products collected in forests and unmanaged areas often play an important role for households in rural areas. These products not only support the households' own consumption and provide a safety net during crisis and as a response to shocks, but may also be a means to accumulate assets and provide a path out of poverty (Angelsen et al. 2014). The latter role of forest products may be strengthened for those products that have qualities linked to origin. As shown in Figure 1 there are a number of important elements of GI potential, many of which are often not present in the case of marketed products derived from forests and unmanaged areas. However, in the pursuit of an inclusive economic growth in rural areas, a new opportunity may be found in creating awareness of GI qualities and building of local capacities and an institutional framework to support GI product and market development. This is for example being promoted among women producers of Shea butter in Benin (Intellectual Property Watch 2013). Collection of Shea nuts in open woodlands and processing into Shea butter is a traditional income generating activity among women who often do not own their own land. A GI registration of the Shea butter, based on i) the local texture, color and aroma of the butter, ii) the important traditional role of Shea butter in the local culture, as well as iii) on the traditional collection and processing of the nuts, would be a means to valorize women's agricultural efforts, bring them closer to economic autonomy and help to conserve the resource (Intellectual Property Watch 2013).

Though the majority of GI products are agricultural products and, outside EU, handicrafts that are not made from products harvested from forest or other unmanaged or *wild* habitats, there are number of forest and wild products<sup>2</sup> that have been registered as GI products. In Europe several GI honey products are produced by bees foraging in forest and other unmanaged habitats and have obtained GI status based on arguments for quality derived from wild habitats (DOOR database), while in Korea 11 forest products such as different kinds of mushrooms are registered GI products. In Ethiopia, though not yet having a specific GI legislation (Hirko, 2014), several forest products such as forest coffee and wild pepper and other spices from the forest have been suggested as possible GI products (Roussel & Verdeaux 2007). The specific case of GI products from unmanaged areas is that often many small producers and rural communities are involved in the collection and marketing of the products. The market premium associated with the GI label of the products may thus be an important addition to household economies and local livelihoods.

Disregarding South African wine, the first three African GI products, described above, were PGI registered in 2013 after efforts by CIRAD and OAPI and funding from AFD. One of the PGI products, Oku White Honey, is produced by groups of small-scale honey producers and marketed through cooperatives. Oku White honey is produced in a unique ecosystem (disctintive vegetation and favourable climate) in the nationally protected forest of *Kilum Ijim* near Mount Oku in Cameroon (Coulet & Mahop 2012). The pollination by both wild and domesticated bees of the unique floral diversity, dominated by two white flower plants, *Schefflera abyssinica* and *Nuxia congesta*, yield a high quality honey with a characteristic white color and slightly acidic flavor (WIPO, 2014). The Oku honey has been known in Cameroon for a long time (Blakeney et al 2012), but after PGI registration in 2013, the honey is now facing export markets in Europe and North America. The marketing is on the rise and expanded income streams are already benefitting a substantial number of local beekeepers. For sustainable production and maintenance of the quality of the Oku honey, the producer group members in

<sup>&</sup>lt;sup>2</sup> By forest and wild products we refer to products collected in natural forest and other unmanaged areas. This includes timber and non-timber forest products such as fruits, plant parts (tubers), fauna and products derived local fauna, such as honey and wild silk.

collaboration with non-governmental organizations are making efforts to conserve the forest, create awareness of ecosystem among local communities, and have reforested degraded areas (Bainkong, 2014). The GI registration of the Oku White Honey includes a GI standard with rules governing the specific honey chain from production to retail. Since the GI registration, prices have increased from 1,500 to 4,000 FCFA (2.8 – 7.5 USD) for a liter of processed honey and several new SMEs have been created (WIPO, 2014). The higher prices are injecting a substantial monetary value into the local economy and improving livelihoods of beekeepers and processors.

## Kenyan cases of forest products with GI potential

Among African countries with an interest in developing GI products and markets, but still lack a legislative and institutional framework is Kenya. A GI bill was drafted in 2007 but is yet to be debated and enacted (Blakeney et al. 2012). The Kenyan Intellectual Property Institute (KIPI) carried out a project in 2009 describing a number of pilot GI products, including products from agriculture (dairy products), agroforestry (coffee) and forest areas (honey and wild silk) (KIPI, 2009). The following two sections present new case studies of the two forest products honey and wild silk. The studies were carried out in the period 2014 – 2015 and included interviews with producers, processors, marketing agents, NGOs, research institutions and key informants from official agencies, as well as literature and document review and preliminary product evaluations. Data collection aimed for information on the five major elements of GI potential as depicted in Figure 1.

#### Mwingi honey – "Linking forest biodiversity to sustainable livelihoods"

Beekeeping has been practiced in Kenya since the hunting age and today is a widespread activity in rural areas, contributing to household diets and economy. There is an estimated 145,000 beekeepers in Kenya, most of whom are small scale with less than 10 hives (Carroll and Kinsella 2013). The most suitable areas of beekeeping in Kenya are the arid and semi-arid areas where rain-fed agriculture is difficult and forests and shrubs dominate. Therefore, in these areas honey production is often a particular important contributor to livelihoods of rural communities (Shiluli et al. 2012). Mwingi sub-county in Eastern Kenya is one such area, which is also known for its production of high quality honey with unique tastes. For this reason, honey from this area was selected as one of the pilot GI products by KIPI in 2009. Mwingi honey is produced by local *Apies melifera* subspecies that pollinate and forage on the Acacia woodlands dominating the region. Traditional log hives, hanging from branches of the local Acacia trees, still dominate most apiaries but modern beehives are also

becoming widespread. Extraction of honey from the combs and further processing is either carried out by beekeepers themselves or, more often, at centralized processing units managed by associations of beekeeper groups. Besides beekeeping, many people in the area also practice agro-pastoralism, which traditionally have complimented beekeeping activities well. Many beekeeping groups are organically certified according to the Kenya Organic Agriculture Network; an effort that was supported by the institute of Market Ecology in Switzerland in collaboration with Kenya's Ministry of Agriculture and Livestock. This has created a wider appreciation and demand for the honey. One type of honey, which is processed in Mwingi, is labelled as 'Ecohoney Linking forest biodiversity to sustainable livelihoods', indicating that producers are well aware of the role of their beekeeping in the area and use this in the marketing. During field work, several buyers explained how they had traveled from far areas in the country in order to purchase the honey, which supports local statements of quality honey.

Besides the main elements of a GI product described in the previous section, all GI honey that are registered in the EU door database are described with floral sources based on pollen analysis, which provide hard evidence of the natural settings surrounding the apiaries, and physiochemical properties, such as water and sugars content as well as more specific properties tied to food safety. Seven samples of different honeys, collected among beekeeper groups in Mwingi, were analyzed according to the EU directive for honey (2001/119/EC). The pollen grain analyses for all samples showed dominating pollen content from shrubs and trees typical to the local semi-arid natural setting, with Acacia sp. often most dominating. Of the seven samples analyzed, four were classified as table honey, i.e. a physio-chemical quality fit for human consumption, while the rest were classified as industrial honey, i.e. a lower quality only fit for further processing, as ingredient in the food manufacturing industry. The lower classification was due to low diastase activity, which is an indication of too much heating during processing. This shows that there is a need for training and capacity building in the local part of the supply chain in order to ensure all producers and processors in the area can supply the quality that is essential from a GI perspective. GI registrations contain product standards, which among others includes detailed requirements for certain processing and quality parameters. This is used to safeguard GI honeys from local inferior honey products that fail to meet the standards, which should be part of the GI registration of honey in Mwingi.

The typical woodland in the area have been under pressure for many years from agricultural activities and charcoal production, but recently, with more emphasis on improving honey production, communities are

starting to realize the importance of a sound environment for bees. Reforestation programmes have been underway to recover lost forested areas with community involvement, training among beekeeper groups includes ways of conserving forests and surrounding vegetation where bees forage, and especially areas surrounding apiaries are protected against degradation. Just like producers of certified organic products justify premium prices with a reference to environmental qualities, some GI producers claim to provide ecological services, such as biodiversity conservation (Allaire 2012). Local honey producers in Mwingi are marketing their products based on this same idea, which may also be an important part of a GI registration.

In Mwingi, honey producer groups from the different locations within the area have formed an umbrella body where the production, processing and marketing issues of honeys are addressed. These groups invest in equipment and also advocate for capacity building on proper beekeeping and honey handling practices in order to improve the quality of their produce. There are also established honey market centers, where producers, processors, traders and consumers of honey interact. The International Centre of Insect Physiology and Ecology (ICIPE) has technically and materially supported the smallholder farmers. Through this initiative smallholder's productivity has been improved by 10-18% with a corresponding household farm increase of 15% (Ayuya et al. 2015; Affognon et al. 2015). The collective efforts of beekeeper groups and ICIPE have facilitated a value addition that have given beekeeping in the area a larger emphasis, which has created incentives for producers to conserve bee habitats to sustain production. Communities or clans often have communal lands, held under trust by the county government, and there is unrestricted access to resources for the local people. Beekeepers within the same local area therefore often share apiary sites, where each producer has a social obligation to protect the resource in the area occupied by beehives. As such, informal rules have a role in the conservation of bee forage areas. Local informal institutions, such as taboos and norms, are also important. For instance, the elder men are obligated to preserve the indigenous and ancestral trees and they do this by hanging traditional bee hives on the branches. Destruction of these trees is regarded as a bad omen.

#### Kakamega wild silk - origin specific production for livelihoods and forest conservation

Wild silk production is practiced in several regions in Kenya. However, the silkworm species are different and adapted to different ecosystems and biodiversity. The wild silkworm, *Anaphe panda*, is endemic to the Kakamega forest and feeds specifically on the leaves of the *Bridelia micrantha* tree that occurs naturally within the forest. Mbahin et al. (2012) observe that the wild silkworm produces silk of high quality and it has a longer

lifespan in the predominantly indigenous part of the forest compared to the exotic part. The Kakamega wild silk is described as being a shade of brown in color and uneven. Some producers combine it with the finer mulberry silk fabric, to give the latter a unique texture. The production of the wild silk is dependent on seasons and the presence of the *B. micrantha* tree, which is limiting production. This uniqueness, coupled with the observation by Kioko et al. (1998)) that the silk is soft, lustrous, and with fibers that are stronger and more elastic compared to the mulberry silk, gives the wild silk place-specific qualities that may very well fit a case for GI registration.

Like many other fabrics from different parts of the world, including Kente cloth (Ghana), Tartans (Scotland) and Thai wild silk, the existence of the raw material for the wild silk in Kakamega dates back to historical times. However, unlike the above mentioned, which were discovered earlier and their potential exploited hence becoming part of the culture, the Kakamega silk has not been exploited. Only recently, with support from ICIPE, has wild silk production been introduced as a new venture in the region, and as such there is no real cultural link to its production. A producer association covering Kakamega and an adjacent county has 14 groups practicing both sericulture and apiculture. The groups monitor the wild silkworms and after harvesting the cocoons, they either sell them directly to ICIPE or deliver them to a joint marketplace in Kakamega County for processing. This marketplace was established to provide a market for the cocoons from the producer groups, with capacity to process wild silk also. At the time of the field work, one kilogram of wild silk cocoon of good quality and size was being sold locally at KES 200/kg (USD 2/kg). The staff at the marketplace, responsible for the processing, indicated that the wild silkworm cocoons have more wastage and take a longer time to process compared to mulberry silk, hence the lower prices. However, there are also only few costs associated with harvesting of wild silkworms, since they occur naturally. Thus, even with such a low price producers are likely to obtain net profits.

The Kakamega forest is the only mid-altitude tropical rainforest in Kenya and it hosts biodiversity of global importance. The forest has characteristics of the rainforests in Central and West Africa including the high biodiversity value (Wagner et al 2008). The *B. micrantha* tree, on which the wild silkworms feed and spin their cocoons, has multiple uses both for timber and non-timber products. The wood from the tree is durable, fairly hard and resistant to termite attacks, and it also makes charcoal and firewood of excellent quality while its poles are used for construction of huts and granaries. The tree is also used for medicinal purposes, gums/resins and has edible fruits. Due to its multipurpose nature, the tree is attractive to loggers, local subsistence users

and traders of tree products. Thus as Dharani (2011) states, this important tree is endangered. The majority of the surrounding communities derive their livelihoods from small scale agricultural activities and harvesting of forestry products (Müller and Mburu 2009). As mentioned by sericulture members during focus group discussions, people used to destroy the silk moth cocoons and cut down the host tree for its multiple purposes. Furthermore, once *A. panda* has fed on the leaves of the host tree and produced the cocoons the tree is left bare, which caused the people to assume the tree was dead. Today, farming of wild silkworms in Kakamega is being promoted as an enterprise that contributes to forest and biodiversity conservation as well as providing alternative sources of income (Mbahin et al. 2010). With increased sensitization and training mainly from research organizations, sericulture groups have been able to adopt silk production and now harvest the cocoons. With sleeve nets introduced by ICIPE, the collectors are able to net the worms and keep them on the tree during the spinning stage, which not only ensures that more cocoons are produced but also protects the spinning colony on the tree. Once the spinning is complete and the adult moth has left, the cocoons are harvested. The tree is then allowed to rejuvenate. More trees are being planted in order to increase the population of the wild silkworm.

The 14 groups involved in wild silk moth cocoons sell their collections for processing at the Kakamega market place. The groups market their cocoons collectively, which gives them some bargaining power in negotiating for prices. However, they are not involved in processing of the silk and their part of the value chain stops once they are paid for the cocoons delivered. The chain is also challenged by a generally low production volume as well as low demand that do not create incentives for investments to increase production. ICIPE has played an important role in setting up the production and is still having a major role as the main buyer. A real market outside Kakamega to sustain and improve the production. JAICAF (2007) indicated that the Kenya silk market has no clear set goals on quality, price, volume, taste and designs for the industry. These important aspects need to be in place in order to target specific markets with clearly defined products. A GI registration, though not based on an existing reputation, may be instrumental in delivering the needed marketing efforts.

#### The five elements of GI Mwingi honey and Kakamega wild silk

The two case studies described above show that there are strengths and weaknesses for each product in terms of GI potential. Figure 2 qualitatively depicts and compares the GI potential of the honey and silk products

across the five major elements identified in Figure 1. In both cases, the natural link to quality is strong, given the honey bees forage on the local Acacia woodlands and the silk moths' dependence on the local B. micrantha tree. However, the natural environment also presents challenges. The local communities lack capacity to handle climate change risks which bring irregular supply of the products due to changes in the weather patterns. In particular, the bee keeping ecosystem requires long term investments for the sustenance of production technologies that are adaptable and resilient to climate change effects. These would include provision of dams and other water sources for the bees, construction of processing and storage centres that meet GI standards and afforestation with drought resistant, locally adapted tree species that bees can forage on for extended seasons. In terms of the human link, the honey production has been an important part of local livelihoods, both for consumption and sale to other areas of Kenya, for a longer period of time, while the silk production has been limited and revived mainly due to the initiative by ICIPE. The human link is also affected by the know-how and capacity to process the products, which again in the case of silk is mainly limited to training and facilities introduced by ICIPE. This also affects the social ties among producer. Honey producers are organized at several levels, form many local beekeeper groups to umbrella associations that furthermore connects producers in centralized honey markets. The specific quality of the Kakamega wild silk is a rare strength of local products; however, the reputation of the specific quality has not yet been established at silk markets in the larger urban areas. On the other hand, there seems to be a wider recognition of the Mwingi honey, as also observed during field work, even though Acacia honeys are available in several areas of Kenya.



Figure 2. Qualitative evaluation of the five elements of GI potential in the case of Mwingi honey and Kakamega wild silk.

In both cases, the institutional environment represents the weakest element, with several challenges and constraints for GI recognition of honey and silk. Both silk and honey will need policy support in Kenya to be recognized nationally as GIs. Thus the initiatives of KIPI to have a GI policy debated and enacted in Kenya may require both in-county and external support. This would provide an institutional framework that would pave the way for GI registration in Kenya. Further, for the case of honey, a National Beekeeping Policy and a Beekeeping Industry Bill that are still in the process of enactment. Once enacted, these instruments will guide the development of a honey monitoring plan in Kenya to enhance the products' traceability, quality and accreditation both at the national and local level. The country will also need a country-wide association that can drive forward prospects of GI registration of these products through various discourses and different fora in order to gather more political support. Currently the civil society is least engaged in GI issues, including marketing of the two case products. Thus producer concerns and interests are currently not recognized beyond the local level. In the case of the Kakamega silk, there is also an additional problem in that the product is not a food commodity. Therefore, any recognition under the EU GI regime will in any case have to await the expansion of the EU GI regime to also cover non-food commodities. Also as much of the silk is harvested in the state-protected part of the forest, redesigning of communal property rights that cover silk moth cocoons and the trees designated for cocoon production and netting will be important if local communities have to benefit from the registration of the product as GI.

The prospects of GI registration of honey and silk are also hampered by inadequacy of out-scaling resources as only a few national (e.g. KIPI) and international (e.g. ICIPE) actors are involved, and a critical mass of organizational intervention is missing. In the case of the wild silk, the current production rests upon a limited number of households who have been able to join the few groups. Thus societal net benefits of GI registration are likely to be considerably low due to high transaction costs and diseconomies of scale. The value chains are therefore characterized by low production and varying quality associated with capacity limitations and a lack of implementation of quality assurance regulations. In the case of honey, these constraints mean that the production fails to meet the national demand of quality honey. Similar conditions are found for other origin products in Kenya, Tanzania and Ghana. Getting the framework for out-scaling right can open up a valuable market for small-scale producers of origin products from forests.

As both honey and wild silk value chains in the case studies have so far to a large extent relied on local institutions (social capital, collective action, norms, taboos, etc.) to thrive, it is uncertain if this pathway to GI

registration will be maintained, particularly when benefits of GI become widely recognized. There is a risk that state interventions and unfavorable market forces such as elite capture will 'kill' these institutions. With the expected premium prices and/or expanded markets from the prospect GI honey and silk, many of the value chain actors will not be coordinated through the local institutions but through state regulations and formal market rules. This has happened with other initiatives supported by local institutions, such as payment for environment services in arid and semi-arid areas (Homewood, et al. 2011). There is also very little vertical integration of the local producers with other main value chain actors. This raises the likelihood of opportunistic behavior (side-selling, adulteration, etc.) among the other value chain actors which would, eventually, adversely affect gains made by the local producers of the prospective GI honey and silk.

With the current challenges and constraints in the institutional environment, along with a large need for promotion of wild silk, also in local markets, GI registration of honey and silk is not just around the corner. However, with greater emphasis on origin and local qualities in agriculture and trade policies at an African level, changes in the institutional environment is expected. For the cases of Mwingi honey and Kakamega silk, this represents an opportunity to market local produce and create value addition that will benefit small scale producers, just as it has for honey producers on Mount Oku in Cameroon. A GI regime may also help to enhance social cohesion and preserve common heritage among the rural communities, reduce rural exodus and promote local "savoir faire". Furthermore, the natural resources supporting Mwingi honey production and Kakamega wild silk is also expected to benefit from, as GI registration based partially on these very natural resources, creates an economic incentive to preserve them. This view is supported by the Convention of Biological Diversity, which recognizes GIs as traditional lifestyles relevant for the conservation and sustainable use of biological diversity (Dominte 2009).

## **Concluding remarks**

The case studies and our broad and overall analysis of the prospects of origin forest products suggests that options do exist for product valorization and sustenance based on African taste and place. Underpinned by a critical mass of activities and initiatives by a range of international actors and agencies, including WTO, WIPO, FAO, EU, AU, ARIPO and OAPI, as well as international civil society bodies, a renaissance for GIs building a stronger international regime for geographical indications, is now maturing to plausibly overcome polarization and engage in constructive co-evolution.

The energizing part of the conclusion, however, is that new opportunities exist for countries in the global South to pursue development pathways adapted to their own agro-environmental systems, food and clothing cultures and traditional production systems. These opportunities are already being seized by some Asian and African countries, pioneering *sui generis* institutional frameworks for geographical indications and registering some of their origin products as PGI and PDO with the EU. The diverse natural and cultural diversity of rural communities and their local produce, including products derived from forests and wild habitats represent a wealth of origin products with potential for inclusion under development regimes acknowledging such values. However, capacity building at local level, development of quality standard bodies, and a wider institutional environment supporting GI products and markets are needed. Getting these framework conditions right can open up a valuable market for small-scale producers of origin products in a diverse African context is needed to spur and facilitate further development of the GI framework within the African Regional Intellectual Property Organization (ARIPO), also to transform positive externalities such as pollination services from honey production into market value, thus adding to the emerging interest for GIs in the African region.

Research on the specific nature of challenges and case studies of experiences with regard to GIs in the global South are gaining momentum. This extends the scope of research on GIs from decades of eurocentrism to include research on institutional environments for origin products in the many African countries where *sui generis* legislation for GIs has not yet come to pass. It also broadens the scope to investigate conditions under which GIs can truly 'deliver', as a 'stand-alone' economic policy instrument not embedded in foreign economic development programs, for a wider range of developmental dimensions – from biodiversity conservation and traditional knowledge to food sovereignty and green inclusive growth.

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