



# Origin products from African forests: A Kenyan pathway to prosperity and green inclusive growth? ☆



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## ABSTRACT

Many tropical countries have potential for adding market value to unique forest origin products similarly to how EU gain billions of Euro's annually from registering agricultural origin products, with Protected Denomination of Origin or Protected Geographical Indication. Following analysis of the renaissance for the global Geographical Indication (GI) regime, this article provides case-studies from Kenya – on Mwingi Honey, Kakamega Silk and institutional conditions under which producers may incorporate territory specific cultural, environmental, and social qualities of their unique products. We investigate prospects for Kenyan producers to create and capture additional monetary value for their forest related origin products, allowing smallholders to build livelihood, while stewarding natural environments. The origin products are investigated for their potential for protection with a GI, within five different dimensions of and links with the social and natural world. Our study shows that Mwingi Honey and Kakamega Silk have potential for registration under a GI regime based mainly on close links between local environment, flora and product quality, and product specificity. The institutional environment presents major challenges for the development of GI products and markets, exemplified by the Kenyan GI bill which is not yet enacted after almost a decade in the making.

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## 1. 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 opportunity for protection is afforded by Geographical Indication (GI), which originates from the French concept *terroir* and is based on the link between a product's quality and the geographical and human environment in which it has been produced. 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 its shaping by producers, i.e. local landscape custodians (Douguet and O'Connor, 2003). Some of the most famous GI

products include Parmigiano-Reggiano cheese, Parma ham, Darjeeling tea, Champagne and Tequila. The GI regime in the EU has added billions of Euro worth of monetary value to an exclusive selection of high quality European food products (EC, 2012). A 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 through value addition to small scale food producers. 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, e.g. Teshager (2015;2), seeing GI's as instruments to pursue 'economic, biodiversity, cultural and food security objectives'. The case studies aim to illustrate why and how the introduction of GIs may be expected to positively impact producer livelihoods as well as biodiversity in Kenya. The paper concludes the analysis by summing up the challenges of globalization and presenting an agenda for development researchers and agencies to identify and overcome institutional, technical, and other

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barriers for stakeholders wishing to adopt GIs in their struggle for local livelihoods and sustainable rural development.

## 2. 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 et al., 2012). Where, from an ecological economics perspective, application of the Fordist industrial model to agriculture has perhaps de-valored many a cultural and natural landscape, GIs represent a theoretical promise of re-valoring such landscapes, the realization of which is however challenged by many institutional factors. According to Izac et al. (2009), GIs can be seen as economic policy instruments for sustainable development. The wider implementation of GIs in the global South is expected to impact conservation of culturally and environmentally important landscapes and biodiversity, 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 GI regime, such as the EU quality regime, may be structured based on the requirements listed in existing legislation and GI registrations of products. Fig. 1 shows the major elements of GI potential, identified through a review of products that are registered in the EU DOOR database with Denomination of Origin (PDO) or Protected Geographical Indication (PGI), case studies of GI products outside the EU, and the FAO/SINER-GI report 'Linking People, Places and Products' (Vandecastelaere et al., 2010).

In Fig. 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 is held to affect the quality attributes of an origin 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 staff, research bodies etc. Together, the natural and human links align with 'place and people' or the concept of *terroir*, resulting in tangible and intangible product quality attributes that cannot be reproduced outside the original area (Mancini, 2013).

As shown by a wealth of European studies, and recently by Filoche & Pinton (2014) in the case of Brazilian guaraná, the conditions for appropriation and use of an origin product is a very complex matter institutionally, with many stakeholders, legal plurality and political and economic circumstances often favoring actors within global value chains who are committed to strategies of so-called agricultural modernization and industrial processing. These actors stand in contrast to actors committed to 'ecologization' of agriculture/forestry and

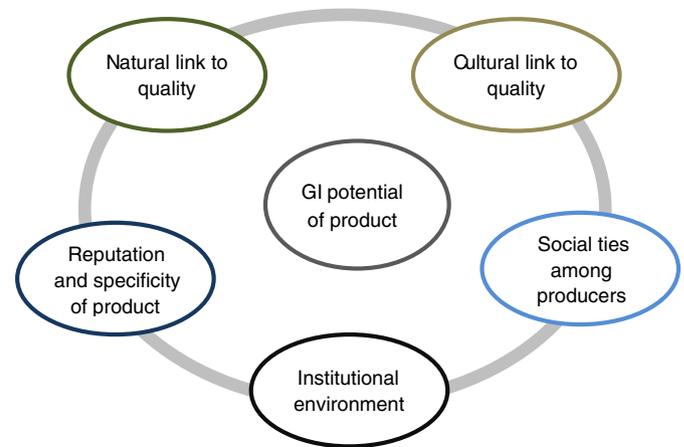


Fig. 1. A simplified representation of the five major elements of GI potential.

proliferation of instruments (fair trade, organic certification and GIs) aiming for redistribution of value in existing value chains, diversification of production and markets, and generation of shorter value chains. The assessment of the institutional component of GI's may be structured as an analysis of the broader institutional environment, presenting barriers, challenges and opportunities for a GI 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 of certified organic production displaying five dimensions: i) overall policies, ii) regulation – in particular conformity assessment systems; iii) research, education and extension that targets certified organic agriculture; iv) agency and roles of the private sector and Civil Society Organizations (CSOs); and v) a broader contextual analysis, i.e. the overall agrarian and rural development strategy. For this paper, the focus is mainly on i) and iv).

## 3. 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 origin 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 global crossroads 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 African countries are called upon to exploit markets for origin products (AU-EC 2012). 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

<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)

from Cameroon and Ziamacenta 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 GIs is highly relevant, also in the context of forest communities.

The basis for a renaissance of 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 replacing 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 primarily from Asia with PGI registered in Europe since 2012. Outside Asia, only a few products have so far been registered by the EU. While 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), national GI regimes in countries such as China, India, South Korea and Colombia also recognize handicrafts, garments and other non-foodstuffs; hats, potteries, woodcarvings, ornamental flowers, traditional medicine, tobacco etc. If non-foodstuffs are also included in the EU GI regime, it will open up for even more EU registrations of GI products from the Global South. Another result of the new international GI regime 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. However, so far African products are underrepresented among the world's GI products, even though many African countries 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) as a possible influential force on this development, opportunities arise for tapping into the GI product potential that is 'hidden' in the diverse cultural and natural environments of Africa. This can lead to increases in numbers of African GI products and growth in regional GI markets, which is currently spearheaded regionally by countries like Morocco, which has 35 products registered under the national GI legislation, in place since 2008 (Le Maroc Vert, 2015). In other African countries, several products have already been proposed as potential GI products, such as Kalahari Melon Seed Oil (Southern Africa, incl. Namibia), Madagascan Vanilla, Mauritius Demerara Sugar, Shea butter from the Massi plateau (Burkina Faso), and Zanzibar Cloves (Tanzania).

#### 4. Forest origin products and new opportunities for rural livelihoods

Products collected in forests and unmanaged areas often play an important role for the livelihood of 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 Fig. 1 there are a number of important elements of GI potential, some of which are often not currently documented in the case of

marketed products derived from forests and unmanaged areas. However, in the pursuit for inclusive green economic growth in rural areas, a new opportunity may be found in creating awareness of GI qualities and building 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 (IP 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 (IP Watch, 2013).

Though the majority of GI products are agricultural products, there are number of forest and wild products<sup>2</sup> that have been registered or proposed as GI products, ranging from hard wood timber species and forest vegetables to alcoholic beverages and handicrafts made from forest and wild products, see Table 1. In Europe, several GI honey products are produced and collected from bees foraging in forest and other unmanaged habitats and some of these have obtained GI status based on arguments for quality derived from wild habitats (DOOR database). In Korea, no less than 28 forest products, such as different kinds of mushrooms, wild vegetables and medicinal plants, were registered with GI in 2010. In Ethiopia, while the country has no specific GI legislation (Hirko, 2014), several forest products such as wild forest coffee, wild pepper, and other spices from the forest have been suggested as possible GI products (Roussel & Verdeaux, 2007). In Morocco, several GI products are derived from natural areas with limited management, such as desert euphorbia honey, wild rosemary, and argan oil from the Argan forest region, an UNESCO Biosphere reserve (Le Maroc Vert, 2015). The specific case of GI products from forest and other primarily 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.

Two of the products in Table 1 are among the first three African GI products registered by OAPI, which governs a common GI framework for 17 African countries. Oku White honey, Penja Pepper and Ziamacenta coffee were PGI registered in 2013 after efforts by the French research institute CIRAD and funding from the French Development Agency (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 (distinctive vegetation and favorable 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 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,

<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.

**Table 1**

List of products from forests or other unmanaged areas, proposed or registered with GI protection. The products have been identified through online searches and review of literature and documents; therefore the list should not be seen as exhaustive.

Country	Product	GI registration	Reference
Benin	Shea Butter	Proposed	IP Watch, 2013
Cameroon	Penja pepper Oku honey	OAPI <sup>1</sup>	Chabrol et al. 2015
Colombia	Aguadeño hat & other handicrafts	Appellation of Origin laws	Pérez Villareal, 2012
Ethiopia	Wild Forest Coffee, e.g. Heranna	Proposed	Mengistie et al., 2012
	Forest pepper	Proposed	Roussel & Verdeaux, 2007
EU	Honey from wild habitats	EU GI law	DOOR Database
Gabon	Okoumé wood	Proposed	Coulet & Mahop, 2012
India	Nilambur Teak	In process	Vasu 2015
	A number of handicrafts	Indian GI of Goods Act	Gautam & Bahl, 2011
Indonesia	Javanese Teak	Proposed	Dwi et al., 2006
Mexico	Mezcal from wild <i>Agave cupreata</i>	Appellation of Origin laws	Granich et al. 2010
Morocco	Argane oil	Law no. 25–06 Distinctive Signs of Origin and Quality	Le Maroc Vert, 2015
	Taliouine saffron		
	Desert Euphorbia honey		
	Wild rosemary		
South Korea	5 kinds of mushroom 5 kinds of nuts 10 kinds of fruits and berries 5 kinds of medicinal plants 3 kinds of wild vegetables	Agricultural Quality Control Act	Italian Intellectual Property Rights, 2010
USA	Natural wild rice	Trademark	Babcock & Clemens, 2004

<sup>1</sup> OAPI: African Organization of Intellectual Property.

prices have increased from 1500 to 4000 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.

## 5. Kenyan cases of forest products with GI potential

Among African countries with an interest in developing GI products and markets, and yet lacking a fully operational legislative and institutional framework, is Kenya. A GI bill, drafted in 2007, is yet to be 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 sections present new case studies of two forest products, honey and wild silk. The studies were carried out in the period 2014–2015 and included interviews with a number of actors in the local honey and silk sectors and representatives from various organizations, as well as literature and document review and preliminary product evaluations. In Mwingi, respondents included ten producers, three processors, five consumers, five marketing agents, one NGO representative, two representatives of research institutions and six key informants from official agencies. Also in Kakamega producer and processor interviews (six) were combined with focus group discussions (see Table 2).

**Table 2**

Data collection methods and informants in each of the two case studies.

Case study	Data collection	Respondents
Mwingi Honey	Interviews	–10 producers, 3 processors, 5 consumers, 5 marketing agents, and representatives from the Kenyan Honey Council, International Centre of Insect Physiology and Ecology, National Beekeeping Institute, Ministry of agriculture and Livestock, Ministry of Trade, Industry and Enterprise, certification body Kenya Organic Agricultural Network, the Kenyan Intellectual Property Institute. –4 FGDs with producers –7 samples from Mwingi honey producers, stored in food grade containers at room temperature until shipment to Germany for physico-chemical and pollen analysis by Quality Services International GmbH, Bremen.
	Focus Group Discussions	
	Honey sample analysis	
Kakamega silk	Interviews	–2 processors, 3 silk and clothe traders, 1 representative of the Sericulture Institute of the Kenya Agricultural and Livestock Research Organization. –FGDs with members of 2 wild silk worm producer groups in Kakamega county, and field visits in the <i>B. micrantha</i> growing areas.
	Focus Group Discussions	

The interviews and product evaluations aimed to collect data regarding the five major elements of GI potential as depicted in Fig. 1. The natural and human links were assessed in terms of how strong the links were between specific product properties and qualities on one hand and origin on the other. The institutional environment and social ties were assessed according to their supportive and positive influence on the producers' opportunities and capabilities to strengthen and benefit from the origin-based product qualities. Lastly, the element of reputation and specificity was broadly assessed based on interviews, observations and local researchers' own insights into each sector, as well product evaluations. Section 5.1 and 5.2 present the two cases based on collected information if no specific reference is mentioned, and in section 5.3 the GI potential is presented in Fig. 2.

### 5.1. 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 are an estimated 145,000 beekeepers in Kenya, most of whom are small scale with less than 10 hives (Carroll & Kinsella, 2013). The most suitable areas of beekeeping in Kenya are arid and semi-arid areas where rain-fed agriculture is difficult and forests and shrubs dominate. In these areas, honey production is often a particularly important contributor to livelihoods of rural communities (Shiluli et al., 2012). Mwingi sub-county in Eastern Kenya is one such area, known for its production of high quality honey with unique floral

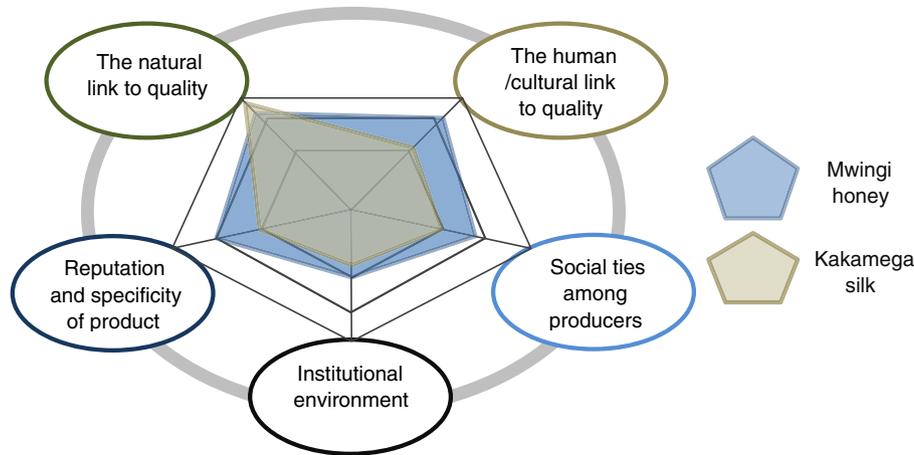


Fig. 2. Qualitative evaluation of the five elements of GI potential in the case of Mwingi honey and Kakamega wild silk.

and aromatic tastes according to producers as well as consumers. Honey from this area was selected as a pilot GI product by the Kenyan Industrial Property Institute (KIPI) in 2009; a short-lived initiative that did not lead to further development of a GI framework. Mwingi honey is produced by local *Apis mellifera* subspecies that pollinate and forage on the Acacia woodlands dominating the region and which are known to produce mild and sweet tasting honeys. According to producers, traditional log hives, which were observed hanging from branches of the local Acacia trees throughout the area, 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. Beekeeping members of the Mwingi Honey Market Place, which is a cooperative and the primary sales outlet of Mwingi honey, are certified as organic producer, under the Kenya Organic Agriculture Network, an achievement 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 (pers. Com. Honey Market place Chairman). One type of honey, which is processed in Mwingi, is labelled as 'Eco-honey'. It links 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 afar elsewhere in Kenya, in order to purchase the honey in Mwingi, supporting local statements of Mwingi honey being broadly perceived as of high quality.

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 physio-chemical properties, such as water and sugars content as well as more specific properties related to food safety. Seven samples of different honeys was collected among beekeeper groups in Mwingi and analyzed, according to standards set by 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 according to the EU directive, i.e. a physio-chemical quality fit for human consumption, while three were classified as industrial honey, i.e. a lower quality only fit for further processing and as ingredient in the food manufacturing industry. The lower classification was due to low diastase activity (i.e. low presence of specific enzymes) and relatively high levels of hydroxymethylfurfural (HMF, though only one sample exceeded maximum allowed content) which are both indications of excessive heating during processing, a

common challenge in rural Kenya (Muli et al., 2007) This shows that there is a need for process standard setting, 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 registration implies specification of product qualities, 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 quality specified, and GI registration of honey in Mwingi would require such specifications.

According to representatives from the agricultural ministry and ICIPE, the typical woodlands 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 undertaken by beekeeper groups includes awareness 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 different locations within the area have formed an umbrella association 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. The group participates in honey market centers, where producers, processors, traders and consumers interact. In the same area, the research institute ICIPE has technically and materially supported a group of smallholder farmers to undertake beekeeping. Through this initiative the smallholders' 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 has elevated the status of beekeeping in the area, and created incentives for producers to conserve bee habitats to sustain production. The local honey producers explained how communities or clans often have communal lands, held under trust by county governments and with unrestricted access to resources for the local people. Beekeepers within such local areas 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 as explained during the focus group discussion with

producers. For instance, the elder men are obliged 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.

### 5.2. Kakamega forest silk – origin specific production for livelihoods and forest conservation

Forest 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 forest 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, the rareness of which limits production. This uniqueness, coupled with the fact that the silk is soft, lustrous, and with fibers that are stronger and more elastic compared to the mulberry silk (Kioko, 1998), 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 wild silk has not been exploited commercially. Only recently, with support from ICIPE, was a pilot market for wild silk production introduced as a new venture in the region, and as such there has been 'only' a cultural link to its production in a non-market context. Today, a producer association covering Kakamega and Vihiga counties has 14 groups practicing both sericulture (rearing of silk caterpillars) and apiculture (beekeeping). 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, and it also has capacity to process the wild silk. 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), which is lower than that offered for mulberry silk. 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. However, costs associated with harvesting of wild silkworms are lower, since they occur naturally. Thus, even with the very low price (above) collectors have an incentive to collect.

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 is also used to make 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 it has edible fruits. Due to its multipurpose nature, the tree is attractive to loggers, local subsistence users, and traders of tree products, and today the tree is endangered (Dharani, 2011). The majority of the surrounding communities derive their livelihoods from small scale agricultural activities and harvesting of forestry products (Müller & 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 wild 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 general low production volumes as well as a monopsony market situation (emerged from single project without marketing component) that has so far not created real market incentives for investments to increase production. ICIPE has played an important role in setting up the production and still maintain its role as the main buyer. Other existing buyers only purchase in small quantities and are not consistent hence not reliable. A real market outside Kakamega to sustain and improve the production is largely missing, as silk traders in Nairobi and other large urban areas are not sufficiently aware of 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, based on the existing and not yet widespread reputation, may be instrumental in delivering the marketing needed for an origin product to succeed in the market.

### 5.3. The five elements of GI Mwingi honey and Kakamega forest silk

The two case studies described above show that there are strengths and weaknesses for each product in terms of GI potential. Fig. 2 qualitatively depicts and compares the GI potential of the honey and silk products as a spider web across the five major elements identified in Fig. 1. In both cases, the natural link to quality is the strongest. In Kenya, Acacia honeys are generally in high demand, and Mwingi is one of three areas in Kenya that are known for substantial production of quality acacia honey. The flowering patterns of the Acacia woodlands of Mwingi provide very good conditions for quality acacia honey production, which was also the reason for KIPPI's choice of Mwingi honey as a pilot GI product in 2009 (KIPPI, 2009). Among the currently 23 EU registered PGI/PDO honeys, the main argument for GI registration is likewise the link between organoleptic traits and the specific floral nectar sources. In Kakamega, the silk moths' dependence on the local *B. micrantha* tree, growing in the biodiversity hotspot and only mid-altitude tropical rainforest in Kenya, gives the wild silk production a unique relationship with the natural setting. However, in both Mwingi and Kakamega, the natural environment also presents challenges. The capacity of local communities to handle climate change risks, which bring irregular supply of the products due to changes in the weather patterns, is but one limitation. In particular, the bee keeping ecosystem in Mwingi requires long term investments for the sustenance of production technologies that are adaptable and resilient to environmental and ecosystemic changes. These would include provision of dams and other water sources for the bees, construction of processing and storage centers that meet prescribed 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 in a non-market (project) fashion, mainly due to the initiative by ICIPE. The human link is about know-how and capacity to process origin products, which in the case of silk is mainly limited to training and facilities introduced by ICIPE. Honey producers are organized at several levels, from local beekeeper groups to umbrella associations that furthermore connect producers in centralized honey markets. The specific quality of the Kakamega wild silk is a rare strength of the local product; however, the reputation of the specific quality has not yet been established at silk markets in the larger urban areas. There seems to be a wider recognition of the Mwingi honey, as observed during field work, even though Acacia honeys are available in several areas of Kenya.

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-country and external support. This would provide an institutional framework to pave the way for GI registration in Kenya. Further, for the case of honey, a National Beekeeping Policy and a Beekeeping Industry Bill are still in the process of enactment, having lingered in the political system for some time. Once enacted, these instruments can 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 practically not engaged in GI issues, including marketing of the two case products. Thus, producer concerns and interests are currently not recognized beyond the local level. There are however, research institutions specifically focusing on sericulture that can help build the capacity of the producers to popularize their product beyond the local level. In the case of the Kakamega silk, an additional issue is 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. 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 also be important for local communities to secure the benefits from a GI registration of their product.

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 low due to high transaction costs and diseconomies of scale. Prospective 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 means that the production struggle to meet national demands of quality honey and the quality is highly variable, as indicated by the honey sample analyses. 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.

Both honey and wild silk value chains in the case studies have, thus far and to a large extent, relied on local institutions (social capital, collective action, norms, taboos, etc.) to work and to govern the local natural resource base. It is uncertain if this can sustain a pathway towards GI protection, particularly when benefits of GI become widely recognized. There is a risk that state interventions and elite capture may foreclose GI producer alliances and local institutions emerging

from below. With the expected premium prices and/or expanded markets from the prospect GI honey and silk, many of the prospective producer alliance actors will not be coordinated through local institutions but through state regulations, formal market rules and top value chain actors (supermarket chains). This has happened with other initiatives supported by local institutions, such as payments for ecosystem conservation in wildlife areas in arid and semi-arid areas (Homewood et al., 2012). 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 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 agricultural, forest and trade policies at a national and regional (ARIPO) 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 forest product 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, the Acacia woodlands and the Kakamega Forest harboring the *B. micrantha* tree, respectively, are also expected to benefit, as a GI protection partially based on the natural link will create an economic incentive for their preservation. 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).

## 6. 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 our conclusion 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 cultural and natural 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. 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 from forests. New knowledge in the field of institutional environments for origin food products and GI 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 the 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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