

HONEY PRODUCTION IN GUINEA

The author's trip to the area is indicated by the red circle.

Part II – Bee Product Production, Processing and Marketing in Guinea

by CONRAD BÉRUBÉ



Honey production is a secondary activity for the subsistence farmers of Guinea. The Kenya Top-bar Hive (KTBH) would allow rural beekeepers to increase the quality and quantity of bee products significantly—without expecting a revolutionary increase in apicultural acumen or capital acquisition. Assuming that:

- annual per capita income in Guinea is about \$2,000²
- given the small size of the typical Guinean traditional (fixed comb) hive, per hive yields are probably about 3 to 4 kg per year³
- average number of hives in the Futa Djalion region are about 10 (ballpark estimate from field work in Guinea)
- bottled honey sells for about \$1.5 to \$2.5 per liter (\$1.10 to \$1.80 1.4 kg) in Guinea or an average of \$1.42 per kilo

Therefore:

- The annual income (from 10 traditional hives per honey producer x 3.5 kg/hive/year x \$1.42 per kilo) is currently approximately \$50 per year per beekeeper.
- KTBH yields are typically 20 to 40 kg per year (almost ten times as productive as the figures assumed above)— but let's call the KTBH five times as profitable (just to be on the safe side, since KTBH's are more costly to build than traditional hives). Therefore honey producers should be able to easily increase their income (with 10 KTBH's) to \$250 per year.
- KTBH's offer a means to significantly increase the annual income from hive products. That's over 10% of the per capita income (and I would imagine that rural farmer incomes are considerably less than the \$2000 national average)—but it also assumes that the honey producers could find buyers for their wares—which may not al-

Demonstrations of the production of moisturizing cream were so popular participants queued up to take samples home to the rest of the family. Here in Bousura even a youngster seems to enjoy sampling the fresh pomade. The folks in the village of Gouba were so enthused about the stuff that the senior wife of a village elder gave her husband an impromptu massage with the skin treatment.



During my stay I lead staff and beekeepers through demonstrations of the production of: • candle-making • batik dyeing • moisturizing skin cream • soap

ways be the case—particularly given the very competitive nature of honey markets. Also, given that production is closely linked with the vagaries of weather and the

local resources available for processing and packaging, it will be tough going to ensure that beekeeping production is of a quality and quantity to remain sustainable.

In between field visits I worked with staff to add to their repertoire of training skills. We practiced a simple technique for tracing newspaper posters to use as visual aids to encourage discussion and assist instruction during village presentations. Similarly, we practiced using photos from magazines and other sources as teaching aids. Staff participated in simple but effective means of processing honey and beeswax for market. The use of role playing and folktales as non-formal education techniques was explored. We practiced making a variety of value-added products that incorporate honey and/or beeswax such as soap, batiked cloth, moisturizing skin cream and candles using local materials and innovations suggested by the staff and local craftspeople. We also encouraged networking with staff working in other programs and across disciplines as an aspect of the integrated development philosophy practiced by OIC and FAPI.



Soap is a value-added product that can be worked up from beeswax and honey. Engaged in such an undertaking are the rural development staff of FAPI, from left to right Rahilou Fatamatou Diallo, Abdourahmane Diallo, Abdoul Gadiry Diallo, Tanou Diallo, Alpha Oumar Diallo, Barry Harouna, and Mamadou Oury Sow.

At right, Tanou Diallo and Abdourahmane Diallo transfer their newly learned skill at making cold cream utilizing locally produced beeswax and shea butter to other staff of FAPI.



Hot drying winds and working in soil can deplete protective skin oils. There is much potential in Guinea for the cottage-industry production of moisturizing skin cream. These value-added products made from local beeswax and shea butter can significantly increase a subsistence farming family's income. Tanou Diallo and Abdourahmane Diallo along with local soap-maker Asiatsu Jing of Gouba demonstrate how beeswax and honey produced in the community of Hore Kola can be cooked up with other materials to form a cosmetic moisturizer and soap. Care must be taken in this process as it includes the use of caustic soda or lye which can cause chemical burns.



Mamadou Bailou Kaby, president of a beekeeping cooperative in the village of Bousura, demonstrates to colleagues his newly learned skills at making candles and moisturizing skin cream using beeswax.



I'm not sure if oil lamps were developed preferentially over candle-making in Africa but, for whatever reason, it does not seem to be generally well known in the rural areas where we worked that beeswax can be used to make high-quality candles. This, even though folks often spend a significant amount of their earnings, in the many areas without electricity, on paraffin candles. Making free-standing candles, especially if they are tapered or cylindrical, usually requires an expensive mold or hours of tedious dipping. A few years ago I developed a technique using PVC tubing and condoms as an appropriate technology alternative to pricey latex molds (a latex mold that produces a single tapered candle can cost \$60 Canadian!) The combination is necessary because wax will leak out of cut PVC tubing and an unenclosed condom will inflate to form a huge candle which would have to be priced too high for local markets to support. This exercise naturally leads to discussion of family planning and AIDS prevention. Representatives from public health units involved in AIDS education programs in Guinea expressed interest in using the activity as an ice-breaking exercise to reduce inhibitions around such discussions and the handling of condoms). You can google "condom candles" to find complete instructions. One of the FAPI technicians, Abdourahmane Diallo, came up with another great idea for making high quality candles using the petioles from papaya leaves, readily available in most of Guinea. In contrast to PVC tubing, the petioles can be easily split prior to placing the wick and filling with wax. The tight seam formed when the cane-like petiole is split and tied back together permits little wax to escape and the candle can be easily removed, eliminating that need for an additional liner.

Processing and packaging of bulk honey presents further challenges towards which FAPI is working towards solutions. Mamadou Yaya Diallo indicated the federation had difficulty in obtaining tanks for storage

of honey. Fifty-five-gallon drums used for the transport of oil are recycled to this end but must undergo rigorous cleaning and, if not properly treated, the acids in the honey will corrode the metal and the honey will take on an off-flavor. Aluminum paint, which is used to treat the tanks to prevent this, is difficult to obtain and very expensive. Federation members have experimented with lining the tanks with plastic bags. I suggested that coating the inside of tanks with wax, as is sometimes done in Canada, might be worth trying and the technicians seemed receptive and committed to testing the idea.

In addition to the production, processing and packaging problems that are shared in common by beekeepers throughout the world, the beekeepers in Guinea experienced a few problems that are unique to the African context. Quite surprisingly beekeepers in the Gharki region mentioned that bears are a frequent problem in the area and often destroy hives—however, subsequent inquiry determined that, although they used the French word “*ourse*” to describe the animal, they were actually talking about the honey badger—a member of the family of mammals that includes weasels, skunks, otters, and, of course, badgers. The honey badger is a wolverine-like creature which seems to share that creature’s reputation for fearlessness and the bear’s appetite for honey and bee brood. In addition, in nearby Balaya, the villagers mentioned that monkeys ravaged many of their hives. Tying the lids to the hives had proved unsuccessful in deterring the raids because the animals would chew through or untie the vines used to secure the hives. We suggested tying the hive lids down with ropes impregnated with used motor oil combined with powdered chilli pepper (using equal parts grease and chilli pepper powder) might be effective. String fences of this type have been used in other areas to prevent elephants from raiding crops⁴.

Although not unique to Africa, Guinea’s status as a developing country makes market issues more challenging. In the villages and towns of Guinea, honey is considered a luxury good. To producers honey serves as a cash crop which can provide income for market goods, but which is rarely the principal source of livelihood. This creates some rather unusual market dynamics. The honey producers feel, justifiably so, that the relative scarcity of the commodity which they purvey should command a price commensurate with its relative rarity. The difficulty is that local customers do not have the abundance of cash to pay premium prices. As a further impediment, in many West African countries honey is fermented into a mead-like honey beer—however, Guinea is predominantly Islamic (approximately 85% are Muslim, 8% are Christian, and 7% adhere to indigenous belief systems). Devout Muslims abstain from alcoholic beverages and are even prohibited from selling their produce for the



PVC tubing and condoms can be used as an appropriate technology alternative to pricey latex molds (a latex mold that produces a single tapered candle can cost \$60 Canadian!) The combination is necessary because wax will leak out of cut PVC tubing and an unencased condom will inflate to form a huge candle which would have to be priced too high for local markets to support.

This exercise naturally leads to discussion of family planning and AIDS prevention. Representatives from public health units involved in AIDS education programs in Guinea expressed interest in using the activity as an ice-breaking exercise to reduce inhibitions around such discussions and the handling of condoms.

You can google “condom candles” to find complete instructions. One of the FAPI technicians, Abdourahmane Diallo, came up with another great idea for making high quality candles using the petioles from papaya leaves, readily available in most of Guinea. Whereas as the petioles can be easily split to remove candles in contrast to the PVC tubing no additional liner is needed to prevent leaking.



FAPI staff proudly show off the result of their efforts to develop an appropriate technology candle-making method in which they innovated the use of papaya leaf petioles as molds.



Guinean beekeepers seemed enthusiastic and even surprised about the results of a simple demonstration making beeswax candles. Perhaps oil lamps were developed preferentially over candle-making in Africa but, for whatever reason, it does not seem to be generally well known in the rural areas where we worked that beeswax can be used to make high-quality candles. This, even though folks often spend a significant amount of their earnings in the many areas without electricity on paraffin candles.



The usual method of selling honey in the open markets typical of rural Guinea involved doling out the amount requested by the customer into a receptacle of the buyer's own.



Promotional posters for "FAMiel" a proposed "flagship" brand of honey. All component honey to be blended into this proposed premium label product should conform to the following specifications:

- have a moisture content no greater than 19%
- contain no significant particulate matter
- contain no "off" flavors

local markets. At the same time, global communications make information about international commodity prices widely available. The high prices paid for products such as beeswax and honey in European and North American markets can be very tempting to producers who are selling their wares locally for tiny fractions of what they see are being paid overseas. Unfortunately, the producers are usually not aware of the huge expenses incumbent in meeting quality standards and in shipping commodities overseas. In addition, honey produced in Guinea often carries the taint of excessive smoke used in harvesting and (as in other parts of the tropics) is naturally very dark and strong flavored. Such strong-flavored honeys are often downgraded in Western markets where customers are accustomed to the much lighter and milder-flavored honeys typical of temperate zone floral sources.

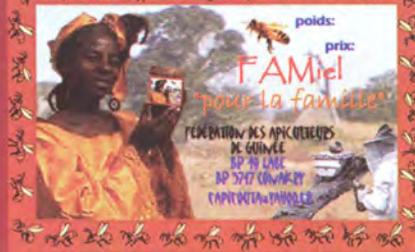
Here's an analogy: imagine that you are trying to sell a Ferrari sports car to a neighbor who would very much like to own it, particularly because it is painted in a color scheme that corresponds to the colors of your local sports team— you both agree that the price is set fairly at \$50,000—your neighbor just doesn't happen to have that kind of cash lying around. You could lower your price considerably to fit within your neighbor's means or you could try to sell your car in the big city where there are folks willing to pay the higher price, but where there are also other folks selling Ferraris— some of whom already own showroom dealerships and who have established reputations with Ferrari purchasers—and where the color scheme of the car is a detriment because it doesn't correspond to the paint jobs preferred in the larger market. This is more or less the situation of the Guinean honey producer; he can either sell

his wares locally at a less-than-optimal price or he can enter a larger, more competitive international market requiring a great degree of effort, investment and business acumen in order to have any chance of success. In addition, the exigencies of meeting even regional, let alone international market logistics, can be very challenging in the Guinean context. There are few paved roads off the routes between major population centers and the packed dirt secondary thoroughfares can become nearly impassable quagmires after a rain, which can be fairly bumpy at the best of times. To illustrate, I tried to keep up my exercise regime with a daily jog during my stay in Guinea and on more than one occasion I was able to pass loaded freight trucks as they crawled precariously around potholes and rock-filled patches. On another occasion, while riding tandem on a motorbike, I had to jump off the back of the cycle on an uphill stretch to avoid a spill as we were moving so slowly up the rocky incline that we could not manage sufficient forward momentum to maintain our balance. I believe that these kinds of practical hurdles are often overlooked in economic analyses based largely on cost/benefit ratios and the like. Nonetheless, I provided regulations for export of hive products to the European Union to both FAPI and OIC to allow them the opportunity to explore such options.

Businesses throughout the world face the hazard of trying to get too big too fast and this is particularly true in the developing world. Therefore, to my admittedly limited perceptions, it seems to me that it would probably prove more fruitful, at least in the short term, for the honey producers in Guinea to concentrate on developing local and regional markets, building customer bases both in their immediate environs and in the major population centers in the region: the country's capital, Conakry, and Dakar, Senegal—the major trading hub for francophone West African countries. Although the relatively small upper class has access to satellite TV, most advertising in rural Guinea is conducted by billboard, radio and newspaper. I suggested that FAPI might attempt a marketing campaign beginning with billboards for which I put together several mock-ups in lay-outs consistent with local aesthetics. I encouraged FAPI to create a premium label honey that should have a moisture content no greater than 19%, contain no significant particulate matter and have no "off" flavors. I even proposed a name for the brand "FAMiel" as an off-shoot of *Fédération des Apiculteurs* (Federation of Beekeepers) and *miel* (honey) which suggested a ready slogan "FAMiel pour la famille" that is "FAMiel for the family". I also produced some examples of very simple labels that could be produced at the village level by woodblock printing, or even batik dyeing, as a means of upgrading product presentation.

A mishap during my return home al-

I suggested that FAPI staff look into the cost of reproducing labels locally using technologies for manual reproduction. Fairly detailed images and printing can be reproduced by using a linoleum or wood blocks for printing and it is often surprising how much significant natural talent for such artwork exists in villages. It may even be worthwhile to experiment with batiked fabric labels that could be made from recycled cotton using a linoleum or wood block stamp to transfer wax onto the fabric. Nonetheless, I also put together some label mock-ups for possible use with premium products for urban or international markets.



Ingredients: shea butter, beeswax, water, sodium borate
Produced in Guinea by an apicultural development project which is supported, in part, by proceeds from the sales of this product.
Please keep this product cool as contents may separate if overheated.
Net weight: Price:

African Queen all natural moisturizing skin cream can be used on hands, face, lips, etc for protection against drying or chapping.

lowed me to contribute a final experience relevant to marketing—specifically, one that illustrated the difficulties in coordinating transport of market goods from Guinea. During my last few days in the country I took advantage of the fine handicraft markets in the country to make all my Christmas purchases. I arrived a week before the yule. My bags, however, apparently had other plans for the holiday—they didn't arrive until New Years Eve.

If you would like to read more about the Farmer-to-Farmer program or traditional beekeeping in West Africa and the Kenya Top Bar Hive see http://www3.telus.net/conrad/oic_toc.htm or google "bees for babar" to find my webpages. There are even videos available outlining the work described here which you can find on www.youtube.com by searching there for "beekeeping in Guinea", "Conrad Berube", or "beekeeping with the Kenya Top Bar Hive".

Conrad Bérubé
890 Eberts Rd
Nanaimo BC V9S1P6
email: uc779@freenet.victoria.bc.ca
bees for babar society http://www3.telus.net/conrad/htmghana/bees_for_babar.htm

Beekeeping in Ghana: on the road in Africa doing developmental beekeeping demonstrations Part 2. Conrad Bérubé. *American Bee Journal*. pp. 474-479. June 2003 http://www3.telus.net/conrad/htmghana/beekeeping-appendix_3_part2.htm

² "Background About Guinea." USAID. February 2007 <http://www.usaid.gov/gn/mission/background/index.htm>

³ "The basis for success in beekeeping within development projects." P. D. Paterson. 2000. http://www.beekeeping.com/articles/us/success_development.htm

How to Keep Bees and Process Honey. CTA Practical Guide Series, No. 13. 2000. http://www.anancy.net/uploads/file_en/013_Beekeeping_v0300A4.pdf

⁴ Living with elephants II; a manual. F.V. Osborn, & G.E. Parker 2002. www.elephantpepper.org/downloads/manual%202.2.pdf

¹ "Beekeeping in Ghana: on the road in Africa doing developmental beekeeping demonstrations, Part 1." Conrad Bérubé. *American Bee Journal*. pp. 384-389. May 2003 http://www3.telus.net/conrad/htmghana/beekeeping-appendix_2_part1.htm