The Japan Trust for Global Environment-funded project

Ecovillage research and recommendations for prevention of global warming and protection of wild animals in the Aheme Lake districts

R E P O R T

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METHODS

To help us understand the indigenous architectures and locally available building materials, we have conducted interviews and on-site research at three sites, Possotome, Kpetou, and Dekanmey villages, assisted by the NGO Benin Ecotourism Concern (www.ecobenin.org) including the acquisition of permissions to enter from the village leaders. The primary modes of transportation are a NGO owned car and a non-motorized wooden boat moored in Possotome. The interviews were conducted on foot against the local communities in the villages focused on the current situation about building materials, potable water availability, energy procurement, etc. Possotome is a famous for its spring in the country though the warmth of the spring is not highly valued in the hot country of Benin, as the temperature has never been measured. Therefore we took measurements on the exit water temperature, air temperature and humidity at a number of places during our research mission as we hope to contribute to the protection of the original landscape at the proposed ecovillage site and the potential hot spring utilization for the purpose of health promotion. We have discussed with the contracted guides and carpenters on the construction, procurement of building materials, and awareness of environmentally friendly issues including energy conservation and they were noted. The gateway village for the ecotours carries multiple functions as a visitor center and transmission of information, the status quo led us to believe in the importance of the wider introduction of English as a universal language not solely depending on the official language of French particularly at the governmental level. The villages of Kpetou, and Dekanmey, a series of on-site interviews were conducted to learn the differences in architectural styles that attribute to the availability of the local building materials. Similarly, the obstacles upon procurement of the materials, existence of the seasonal variables were the focal points of the discussion, with a mind in search of the ideal equipments and materials for the ecovillage. As for the improvement of local community welfare especially on the sanitation issue, eco-sound (composting) toilet workshop was held. The sanitary sewage of the area has being either released to the lake or back-filled in the ground though many community members have learned as a part of establishing the sustainable society through this workshop. The proposal was made to stabilize and diversify the income through sustainable tourism, not to be heavily dependent on fishing particularly when the overfishing accompanied by the modernization of fishing industry leaves insecurity in the future. The importance of continuing the traditional fishing while protecting the fishing ground by introducing partly to tourism was underlined. To realize this to a certain degree, the plantation of mangroves is expected to create synergetic effects such as nurturing the low carbon society, protecting the biodiversity, deterring the coastal erosion, creating employment, alleviating poverty, etc. The knack is to involve the local community in the planting process to show the direct and indirect benefits in this activity, not just providing service to satisfy the oversea visitors, otherwise the effectiveness of the project nearly halves. The talks and interviews held are recorded with some photographic evidences, places where only a white map was available, GPS mapping system was used to locate the team and project site. This report is translated from Japanese to be used for the good of Benin Ecotourism Concern with the emphases on the realization of the ecovillage project, demonstration of pre and post construction including the management and contribution to make a model that benefits the society.

RESULTS

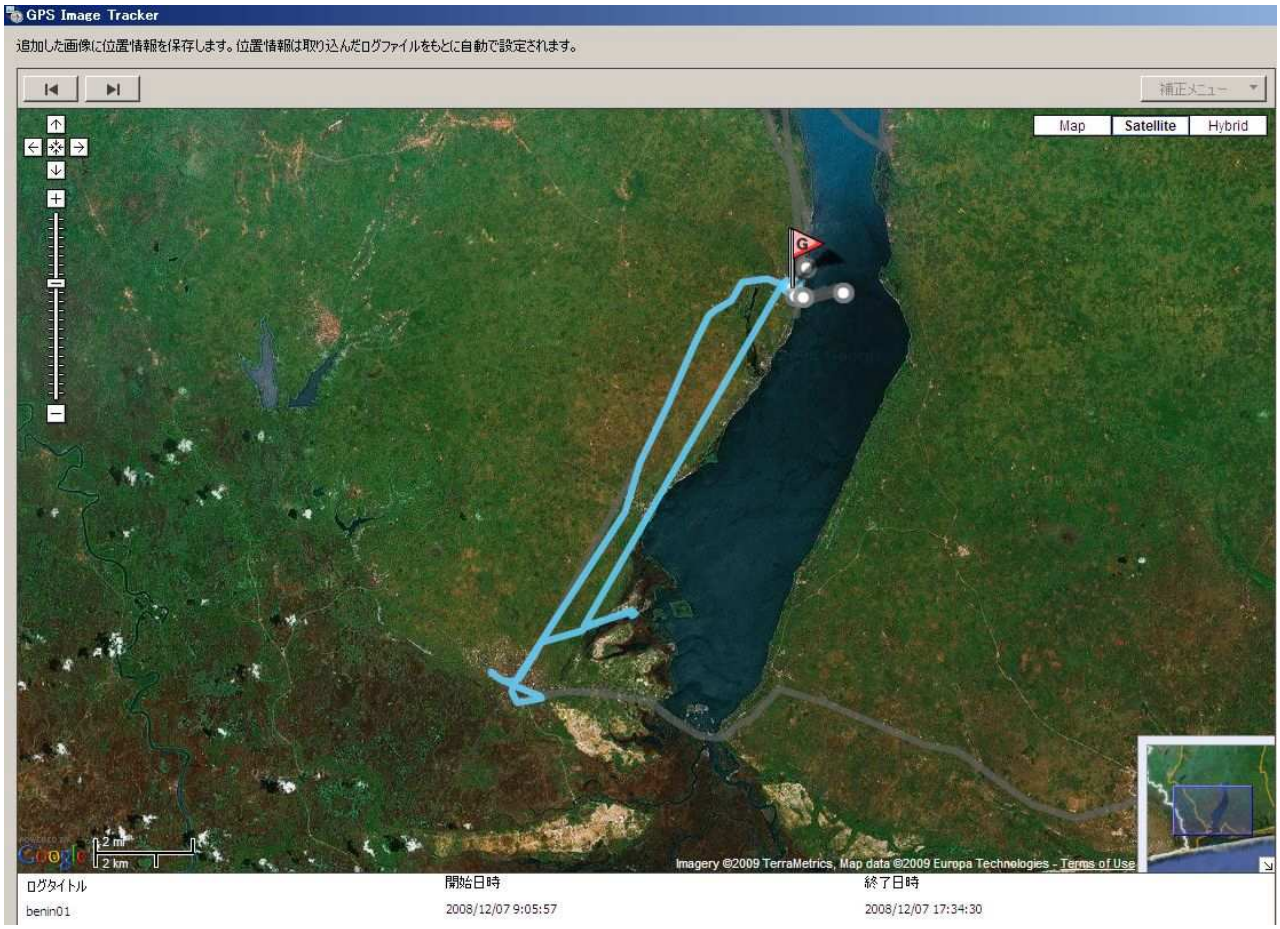
The scheduled accommodation construction site of the ecovillage located at the gateway of Possotome, Aheme Lake shows partial completion on its roof and walls, however, the lack of funding and materials does not offer a promising outcome. Additional funding should be injected on the tour guide training, promotion of local community education, installments on the solar energy equipments and the bio-septic tank, etc. The coconut leaves are easily procured for roofing, but the sands mixed with red clay used to make the cement (about 8% by volume) needs to be transported preferably in a fossil-fuel-free manner from places about 10 kilometers away to maximize the strength of the concrete as the lake water is a saline estuarine water. For the time being, due to the budget constraints, it will be limited to the use of composting toilet, but it can be problematic with the odor and a requirement to involve the visitors' cooperation. Installation of the bio-septic tank will enable to generate biogas from the sewage and the garbage to be used for cooking and other utilities. Retrofitting of the rainwater tanks is also desirable to reduce and reuse the water for supplying in a toilet, garden, etc. For the first segment of the ecovillage construction, two different rooms of one Beninese and one European indicate the complete differences of interests, which in turn contribute to the crucial data collection upon drawing the visitors. Beninese toilet is located in a detached setting and a traditional scoop is used as a shower while the European style may be convenient for some, but also may leave others dissatisfied not meeting their expectation of authenticity. The neighboring country of Togo transmits electricity to the site, but since it carries the connotation of the 'eco'village, the toilet should be fed entirely with renewable energy such as solar and wind power. On the hardware side, the traditional carpentry such as draining water of sands by stepping on them on foot, piling up of about 50cm-high blocks from the foundation, should be succeeded into the future. On the software side, showing the cultural aspects is expected to add the value to the tour i.e. ceremony of offering *slabi,* the palm oil spirit, upon welcoming visitors. It is expected to continue calculating and offsetting the carbon emission associated by the transportation and accommodation on the tour by planting mangroves, 5,000 on this trip, that contributes to the employment of the local people and establishment of low carbon society.

GPS mapping data and photographs

From N 6’31’’24.3 E1’57’’55.1 Aheme Lake central western shore (point G)

To N6’25’’35.9 E1’55’’6.6 Southern Lake of Kpetou

Transportation by a NGO car, Possotome ecovillage visit and observation on different architecture in Kpetou



In Possotome at the proposed ecovillage site with carpenters and NGO staffs

(Left) red clay bricks made locally (Right) Bio-sewage system waiting to be installed


(Left) traditional house in Possotome: blocks are piled up about every 50cm, takes 2 weeks to dry, construction period can be calculated by the total number of blocks (Right) local guide takes the back streets of Possotome, an interview site

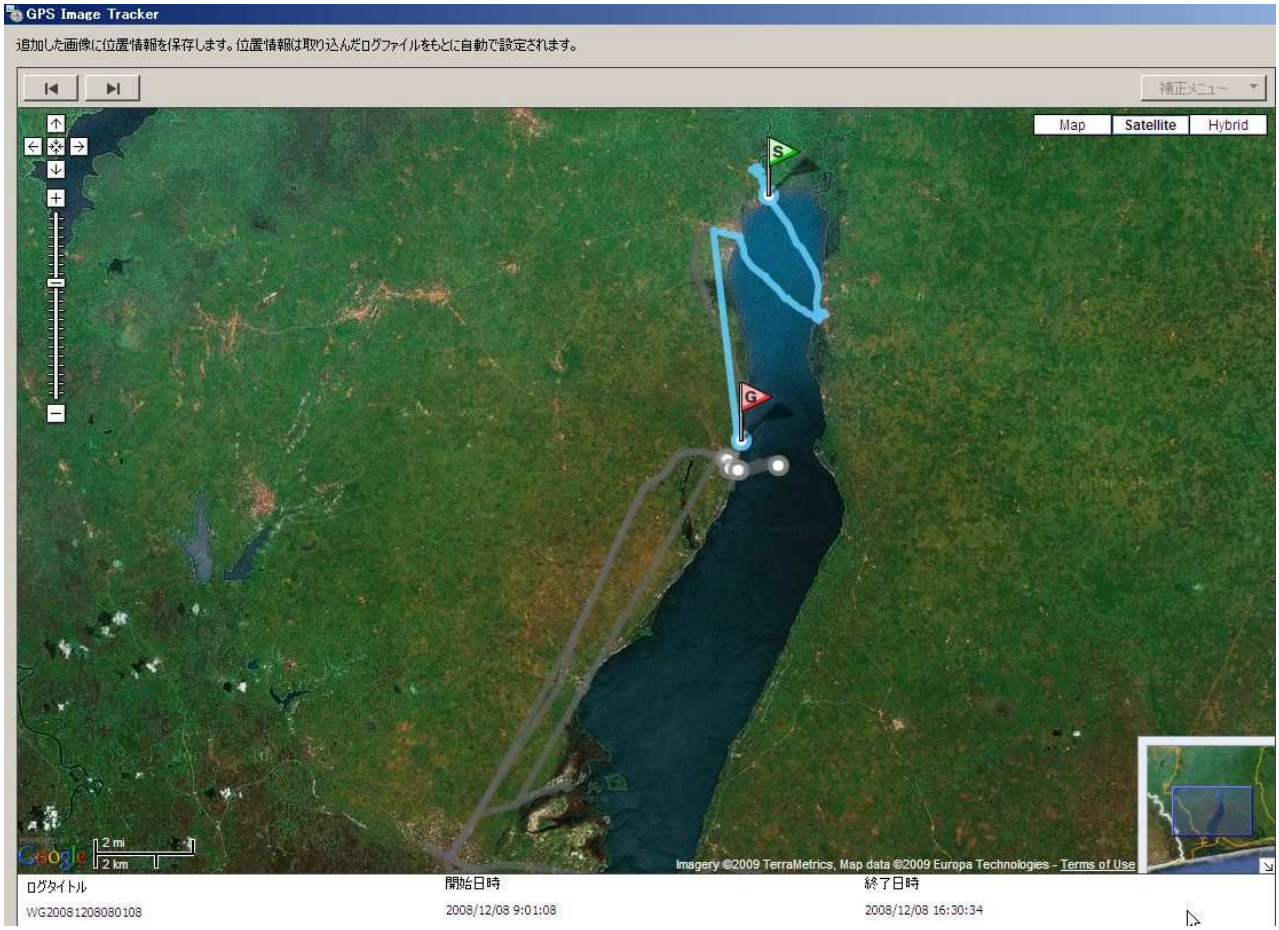

(Left) at the village chief house in Kpetou, welcome ceremony with *slabi,* the strong spirit (Right) Kpetou is located inland in comparison with Possotome, thus the clay is less viscous and sandy, easily fissured and needs wooden reinforcements


(Left) visiting a market to find the available building materials and their prices (Right) visiting a sawmill, woodchips purchased to be used for composting toilets

From N6’31’’24.3 E1’57’’55.1 Aheme Lake central western shore (point G)

To N6’33’’59.8 E1’59’’46.2 eastern shore of Dekanmey (the boat drifted by the wind) Landed at point S

Dekanme is closer to the national road and have a good access, however the culture and customs are at risk of draining, the changes brought to the architectural style are observed



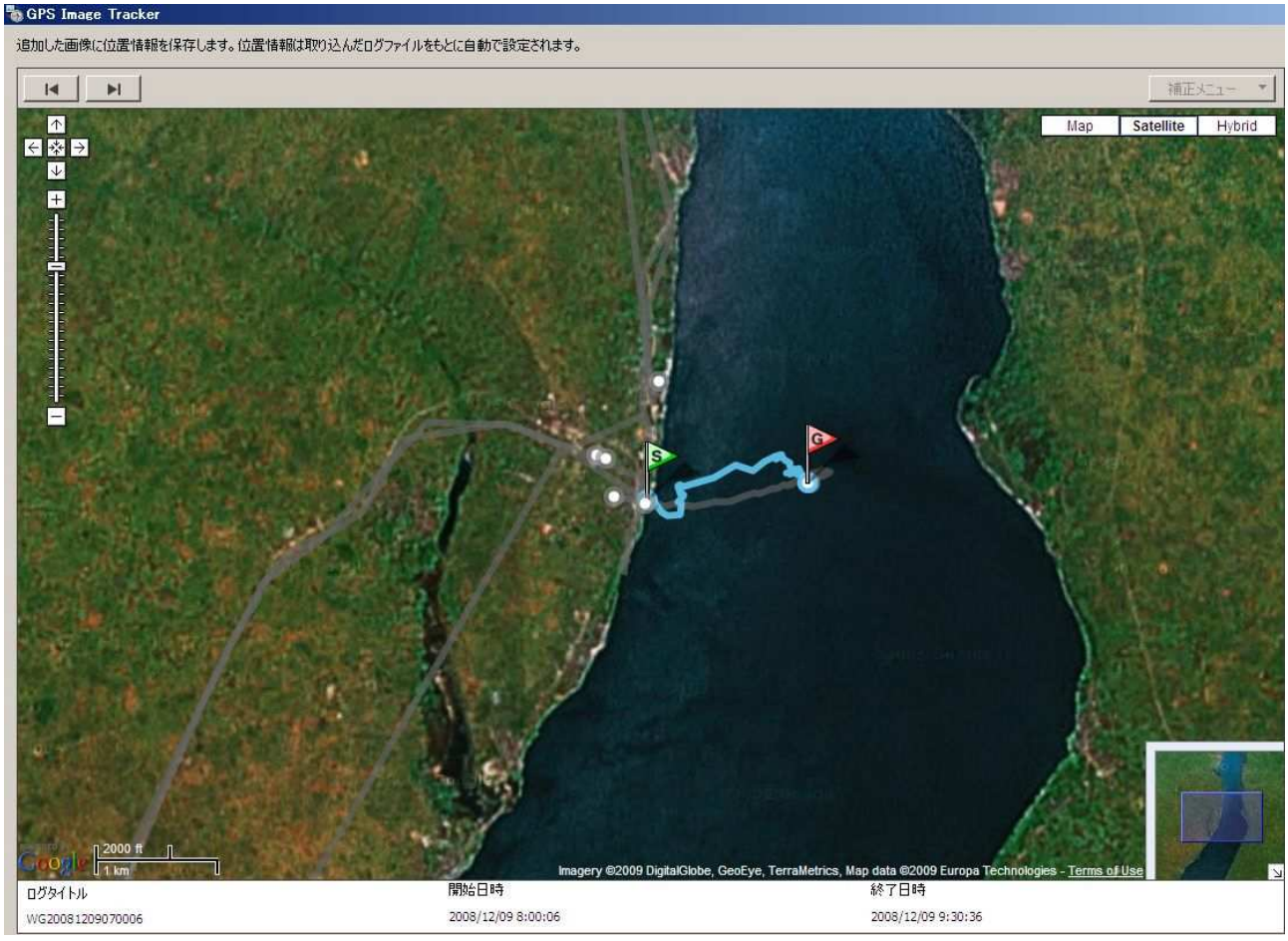
(Left) interview and observation was made with a local guide in Dekanme (Right) vertically aligned reeding, conventional window frame and roofing is easily procured, being close from the national road

(Left) traditional dugout canoe fishing, but the fishery yield is drastically declining (Right) sands used to make concrete are supplied from the lake bottom wholly by child labor

From N6’31’’24.3 E1’57’’55.1 Aheme Lake central western shore (point S)

To N6’31’’8.3 E1’58’’15.2 center of Aheme Lake (point G)

Traditional fishing is experienced on the tour and the effects on the biodiversity with the modernization of fishing is observed, other aspects of sacred fishing grounds with Voodoo cult and ceremonies were also interviewed




（Left）traditional way of fishing is explained (Right) fish with a behavior of hiding in the sands when disturbed are caught by hands


(Left) the prime fish caught these days are small (Right) sacred fishing ground guarded by the Voodoo gods

In Possotome

（Left）mangrove seedlings are loaded onto a rowing boat to be planted (Right）planting is not limited to the visitors, it is a group work with the villagers

（Left）workshop on how to use composting toilet (Right) local cooking class(catfish and tomato couscous)

environmentally friendly ecovillage is indispensable, another reason to keep the children smiling