

Changes in the Status of Bonobos, their Habitat, and the Situation of Humans at Wamba in the Luo Scientific Reserve, Democratic Republic of Congo

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Introduction

Bonobos range over the area between the Congo-Lualaba River and the Kasai-Sankuru River in the Democratic Republic of the Congo (DRC; Kano 1984). Kano et al. (1996) stated that bonobos are more or less continuously distributed throughout the northern part of their range, which is covered by tropical rain forest, and are distributed fragmentarily in the southern part, where the vegetation is a mosaic of forest and grassland. Kano (1992) estimated that the population of bonobos in the whole of the DRC to be ca. 50,000 in 1973. The number has decreased after several wars; however, the current population size is unknown.

Since 1973, when ecological, ethological and sociological studies of wild bonobos in Wamba began (Kano et al. 1996, Kano 1984, 1992), Japanese researchers conducted research seasonally through 1991, and developed much knowledge of the area (Furuichi et al. 1998). However, the studies were interrupted by repeated political instability. We had to discontinue our research due to rioting across the DRC in 1991. The research resumed in 1994, but we were forced to leave again due to the civil wars in 1996 and 1998–2002. Although the situation has remained unpredictable since the second war, we resumed research intermittently just after the end of the war in 2002.

We report on changes at Wamba, including the status of bonobos, their habitat, and the situation of humans, by comparing the condition after the civil wars with the early stage of the research. We also detail our efforts to assist the local community for promotion of the conservation of bonobos.

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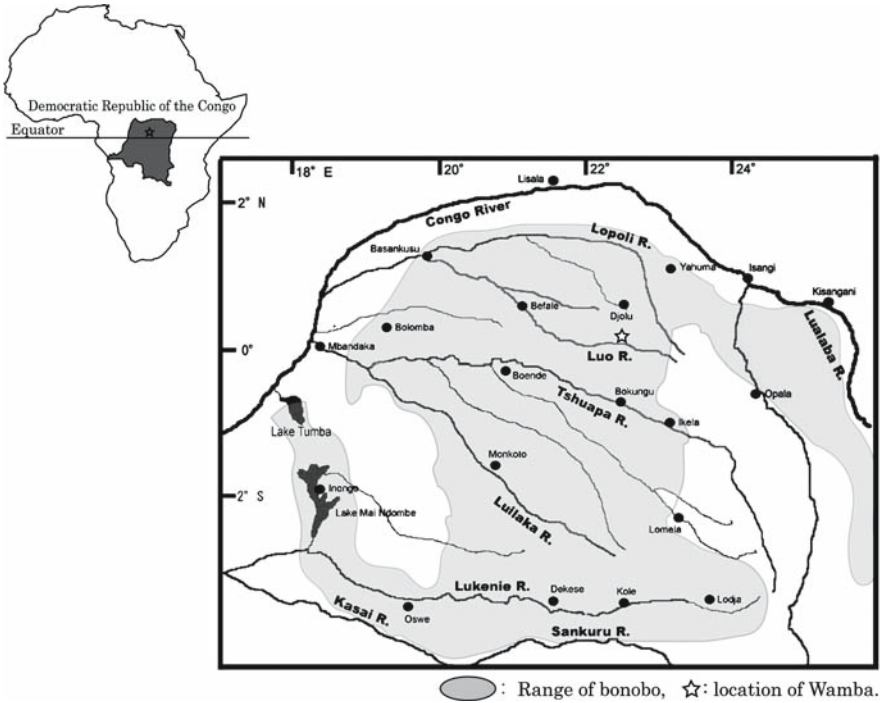


Fig. 14.1 Distribution of bonobos and location of Wamba.

The History of Wamba

Wamba is located at $0^{\circ}11'08''$ N, $22^{\circ}37'58''$ E (Fig. 14.1), 80 km south of Djolu, the center of the region. To the south lie a swamp forest and the Luo River. To reach Wamba, we previously took a regular flight and then drove overland in our car. Currently, there is no regular flight, so we travel directly from Kinshasa to Djolu by charter flight and rent a truck. The roads of the Djolu area are in very bad condition due to the wars.

The village of Wamba comprises five hamlets along a north-south road (Fig. 14.2). Our base camp is in the hamlet of Yayenge, at the southern end of Wamba. The Bongondo people, who live in the Wamba area, are Bantu farmers, though fishing, hunting, and gathering are also important daily activities (Kimura 1998). They are slash-and-burn agriculturists of manioc, cultivating within 1-2 km on either side of the main road. Wamba has about 1,000 residents (Kano et al. 1996).

As a study site, Wamba Forest has several idiosyncratic characteristics. The first is the high population density of bonobos. From 1974 to 1991, ca. 250 bonobos in six unit-groups (E1, E2, P, B, K and S) had at least parts of their home ranges within the Wamba Forest (the north sector of the Luo Scientific Reserve; Kano et al. 1996).

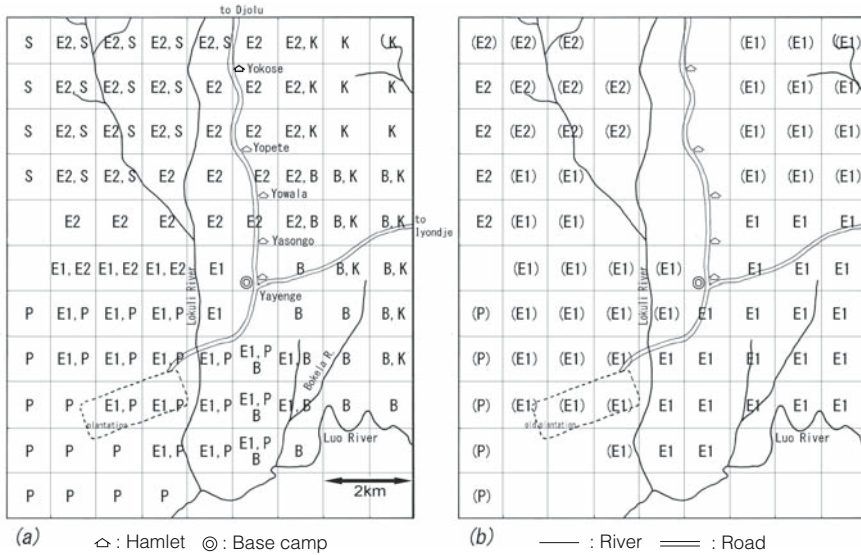


Fig. 14.2 Change in home ranges on each group of the bonobo in the Wamba Forest. (a) Home ranges of six groups in 1995, (b) home ranges of three groups in 2005. Home range data in parentheses are based on information from co-researchers of Congolese and local research assistants.

Researchers observed them by following groups in the forest until 1976. The bonobos of the E group were habituated to feeding on sugar cane in 1977, and the P group was also provisioned beginning in 1979. E1 and E2 formed by the fission of E in 1984 (Idani 1990a, Furuichi 1987). E1, E2, and P were habituated by researchers who observed them directly, and most individuals could be identified. B and K had not been habituated, but a few members could be identified and were observed directly. In 1988, E1, E2, and P comprised 33, 54, and 39 individuals, respectively, whereas B and K were each estimated to have 80–100 members (Idani 1990a, Kano and Mulavwa 1984). On the basis of fragmentary data, S appeared to have >100 members.

The second characteristic of the study site is the co-existence of bonobos and humans. The local people have traditionally allowed the bonobos to co-exist with them because they had a strict taboo against eating them, believing that bonobos were their ancestors. Furthermore, the people of Wamba rely on the primary forest for subsidiary food sources such as wild animals and plants, materials for houses and various tools, and folk medicines. People also eat some of the major food plants of bonobos. Thus, both the bonobos and the primary forest are precious existences for the people of Wamba.

The third characteristic of this site is the extensive contact that we as researchers have maintained with the Wamba villagers. We have employed numerous temporary workers in addition to regular workers, and purchased local foods and materials for

our huts, such as palm leaves for the roofing and sun-dried bricks. Moreover, we have been selling daily necessities at fair market value among the villagers, including clothes for women, salt, soap, machetes, and other goods, which are very difficult to obtain in the Wamba region. We hoped that villagers would benefit from our research activities. In other words, we hoped that they would consider bonobos to be useful to them.

The Luo Scientific Reserve

Since bonobo research began in Wamba in 1974, we have performed continuing field studies (Furuichi et al. 1998). We suspect that no case of bonobo poaching occurred before 1983. During our absences between 1984 and 1987, hunters from outside of Wamba killed bonobos. Moved by these cases, we submitted a proposal to the Centre de Recherche en Sciences Naturelles (Research Center for Natural Science, CRSN), our counterpart in the country, suggesting that a reserve for bonobos should be established in the area of the Wamba Forest. We proposed the establishment of a reserve because all villagers would have had to leave the area if it was designated a National Park. The Luo Scientific Reserve was established in March 1990 (Fig. 14.3; Kano et al. 1996, Idani 1990b).

The Luo Scientific Reserve covers 481 km², with the northern sector encompassing the Wamba Forest (147 km²) and the southern sector containing the Ilongo Forest (334 km²). The Luo River, which is about 100m wide and >5m deep, separates the Wamba and Ilongo Forests. The river is too wide for the two bonobo populations to exchange members under normal climatic conditions. In Ilongo Forest, bonobos are as numerous as in the Wamba Forest, but human density is much lower (Hashimoto and Furuichi 2001). We have two research assistants working in the Ilongo Forest, and they record the ranging area, food remains, and other information about bonobos there. However, the bonobos are not habituated.

The vegetation in the Luo Reserve can be roughly divided into three types: secondary bush and forest, dry primary forest, and swamp forest (Kano and Mulavwa 1984). Although bonobos utilize all types of forest, the dry and swamp primary forests are most important for them because they provide major fruit food resources (Idani et al. 1994, Kano and Mulavwa 1984).

The goal of the Luo Reserve is to maintain the co-existence of bonobos and human inhabitants. Thus, the regulation of the reserve was designed to permit the traditional lifestyles of the villagers in Wamba. The following activities are prohibited to protect bonobos in the reserve: hunting of primates, using guns, wire snares or poison arrows, and clearing primary forest. Other activities such as collecting plants, traditional hunting, and cultivation of secondary forest are allowed in the reserve. The establishment of the reserve served to educate the local people and government officers about the illegal killing of bonobos. Nevertheless, the villagers disliked the establishment of the reserve because they disapprove any restriction of their activities. They also complained that the compensation money to regulation of

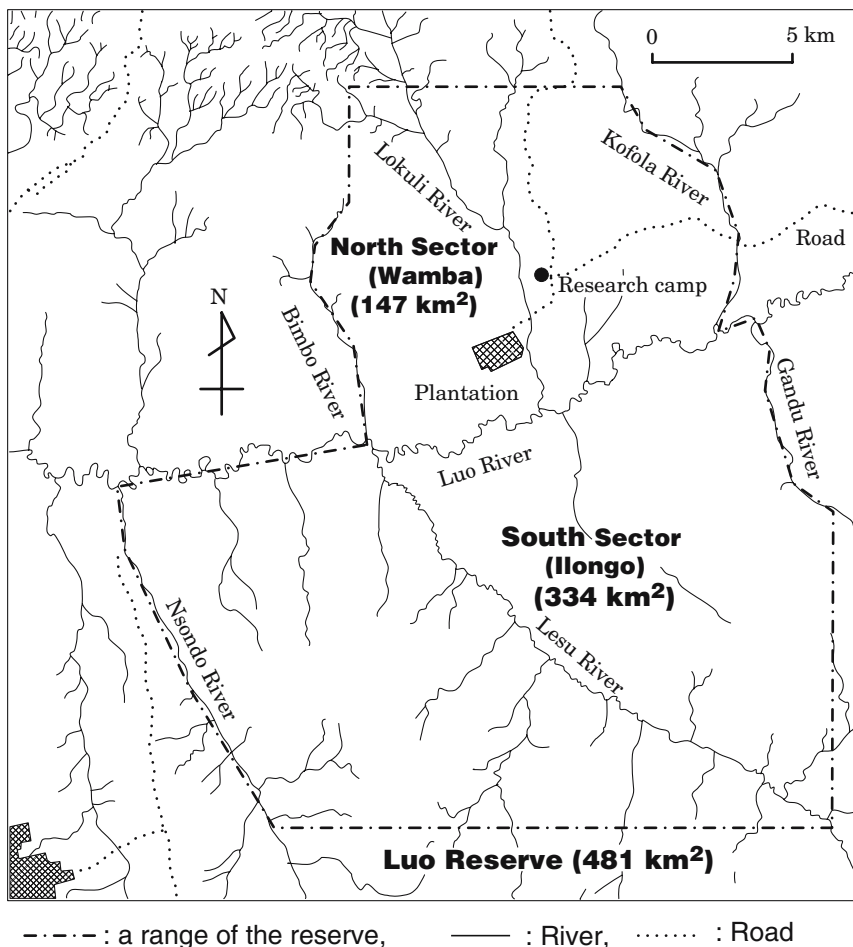


Fig. 14.3 The Luo Scientific Reserve: the Wamba forest (147km²) on the north and the Ilongo forest (334km²) on the south.

the forest utilization paid to them was insufficient. Now the local people have begun to ignore the regulations of the reserve. Two official guards patrol the Luo Reserve; however, the presence of only two individuals with no compelling force does not provide effective protection over the wide range of the reserve.

Decrease in the Bonobo Population and Missing Bonobo Groups

Two remarkable features have characterized the bonobo situation in the Wamba Forest during the past 15 years. First, each group decreased in size after the political disorder in 1991 (Fig. 14.4). For instance, E1 increased between 1976 and 1986

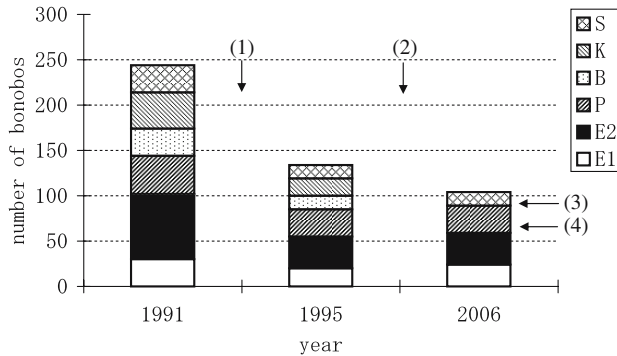


Fig. 14.4 Democratic changes on each group of bonobos in the Wamba Forest. Arrow (1): decrease in group size during the political disorder, arrow (2): decrease in number of groups during two civil wars, arrow (3): presence and group size of S unconfirmed, arrow (4): group size of P group unconfirmed.

and thereafter remained at around 30 animals. Researchers provisioned them with sugar cane between 1977 and 1991 when the riots occurred. The supply of artificial food may have affected the survival and reproduction of bonobos when their food resources were scarce in the forest. By 1995, E1 had decreased to 20 animals. We have no datum on the demography of bonobos in Wamba during 1997–2002 due to the two civil wars, after which in 2004, 17 bonobos remained in E1 (Furuichi 2004).

Secondly, some bonobo groups went missing during the civil wars. In 1995, the home ranges of six groups overlapped around the hamlets of Wamba (Fig. 14.2). They had maintained similar home ranges since 1974, when bonobo research first began in Wamba. In 2005, we observed E1 at close range to the base camp. They mainly used swamp forest in the southern part of the Wamba Forest. During this period, E1 never used the west side of the main road, which they had used frequently before the war. Congolese co-researchers recorded the ranging area of E1 on the west side of the Lokuli River and a wide range on the east side of the main road in 2004. Combining these observations, we concluded that E1 had enlarged its home range markedly to the east and north of its previous home range.

Contrarily, we found no evidence of other groups in the Wamba Forest in 2005. We observed E2 at a site 3 hours on foot from our base camp, outside of the Wamba Forest. However, we found no direct or indirect evidence to indicate the survival of B and K. Research assistants have not been able to confirm their presence after the war till in 2005; thus, it is possible that they have disappeared. At the southwest edge of the Wamba Forest, we recorded some indirect evidence, including footprints and food remains, which may have been left by P, because E1 and other groups had never ranged there. E1 had ranged along the east side of the main road previously. A Congolese co-researcher observed a group in 2004 that appeared to

have been P, but they were afraid of humans. P may have shifted their home range westward to avoid the war and human activities. The survival of S is also unconfirmed. We therefore conclude that the two civil wars greatly affected the population and home ranges of bonobos in the Wamba Forest.

Problems of the Luo Reserve and Other Bonobo Habitats in D.R. Congo

The Bongando people in the Luo Reserve cultivate manioc by slash-and-burn agriculture. Although felling primary forest is prohibited in the Luo Reserve, slash-and-burn agriculture has been expanding rapidly in primary forests. We directly counted the number and size of fields cultivated by villagers in the hamlets of Yayenge and Yasongo, which are located in the southern part of Wamba (Fig. 14.5). Yayenge encompasses 108 ha comprising 91 fields, of which 7 fields (9 ha) are in primary forest, and 84 fields covering 98 ha were created by the clearing of secondary forest. Yasongo is 138 ha comprising 131 fields, of which 117 fields covering 129 ha are in secondary forest and 14 fields (9 ha) are in primary forest. As a result, 0.17% of the northern part of the Luo Reserve was cleared in only two hamlets.

We analyzed Landsat images to determine the distribution of vegetation types in the Wamba Forest in 1990 and 2003 (Fig. 14.6). Areas of dry forest, swamp forest, and secondary forest and/or fields are easily distinguished by color (Hashimoto et al. 1998, Kimura 1998). The image of 2003 shows many new fields, which were created during the intervening 13 years. The border of the primary and secondary forest in 1990 was converted into fields by 2003, and some new fields were located within the primary forest. Expansion of the fields is likely the result of poverty and hunger during and after the war.

Deforestation of primary forest is not only a problem in Wamba, but also across the whole of the bonobo's range. In addition to cultivation, many parts of tropical forest have been sold to timber companies (Schmidt-Soltau 2006, Thompson et al. 2003), with the deforestation to obtain timber is occurring in areas across the Congo Basin (Miles et al. 2005). We saw logging roads and cleared land from the chartered plane traveling from Kinshasa to Djolu. Suitable habitat for the bonobo is being rapidly destroyed.

Hunting bonobos is also a cause of population decrease (Dupain et al. 2000, Dupain and Van Elsacker 2001, Thompson 2001). Historically, eating bonobos was taboo for the people of Wamba. The Wamba Forest supported a high species richness and diversity of mammals, including elephants, buffaloes, hippopotami, bongos, sitatungas, leopards and many species of primates (Idani 1990b). If mammals and other meat resources are plentiful in the forest, the people of Wamba may not be willing to hunt bonobos for food. But now these animals are rare as a result of over-hunting.

During the study period in 2005, we often heard gunshots and also found numerous wire snares in the forest. A female bonobo that we observed in E1 had caught

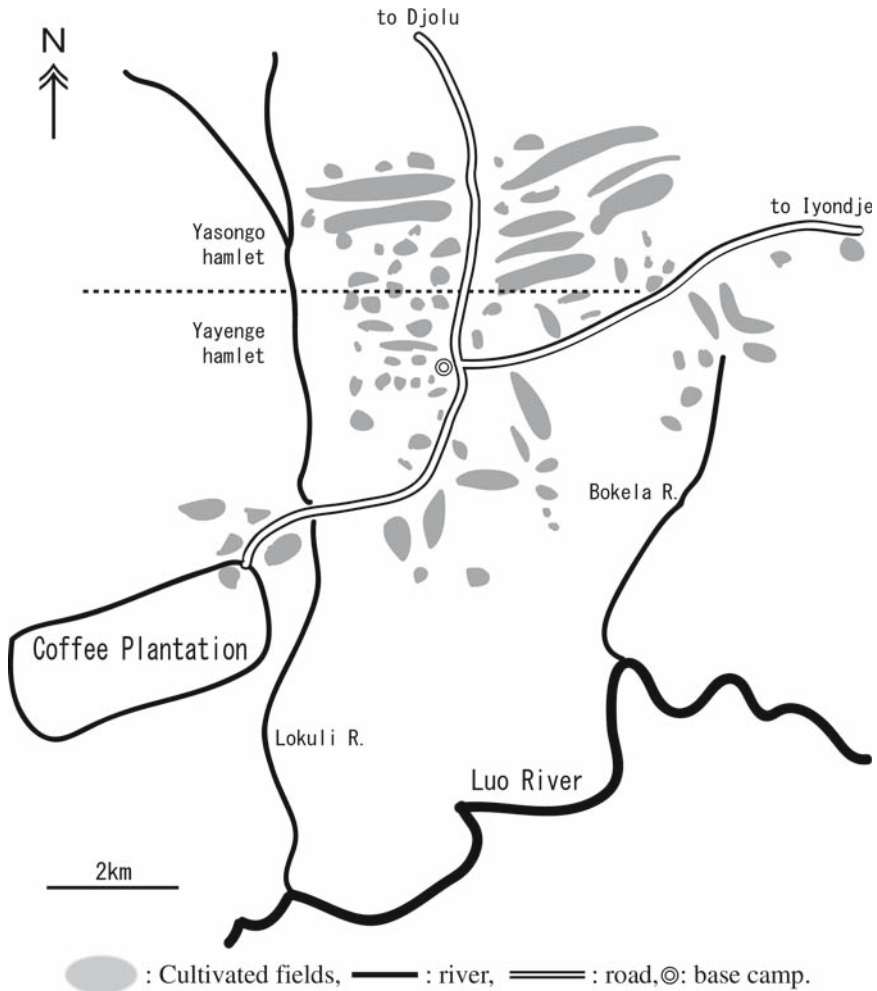


Fig. 14.5 Cultivated places in two hamlets of Wamba in 2005.

her right hand in a wire snare, and a pangolin, also a protected species, was caught in a wire snare (Fig. 14.7). Moreover, in 1991, we received information that Wamba villagers hunted bonobos via poisoned arrows, and they ate bonobo meat in the village. Most people in the DRC now have diets of wild animals, including bonobos (Kano et al. 1996, Kano 1992). Even if the villagers do not eat bonobos, hunting by individuals from other areas may cause decreases in the bonobo population (Cowlshaw and Dunbar 2000).

Progressive economic deterioration in the DRC may have led local people to discard their previous lifestyles. The value of the DRC currency has continued to

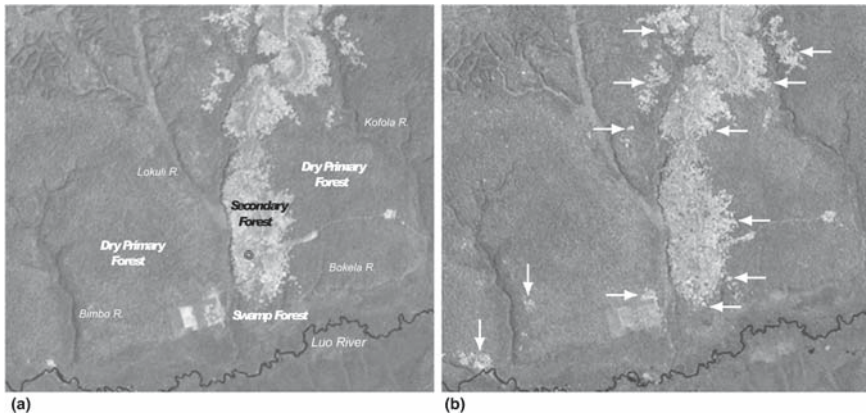


Fig. 14.6 Landsat images to determine the distribution of vegetation types in the Wamba Forest. (a) An image in 1990, (b) an image in 2003: base camp, arrows show expanded fields.

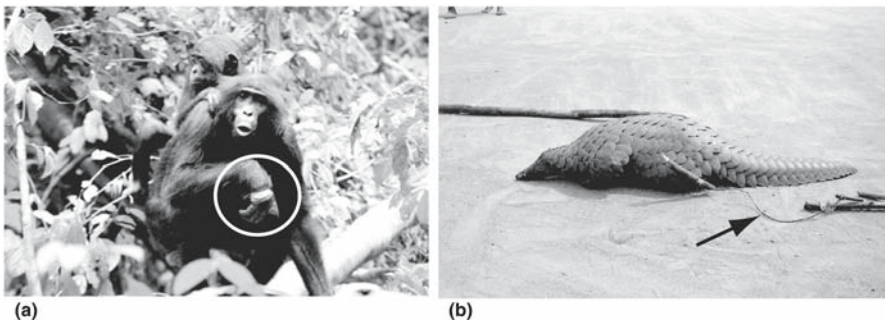


Fig. 14.7 Victims by the wire snare. (a) A female bonobo who caught her right hand in a wire snare. A white circle shows a gaping wound with a wire snare. (b) A pangolin who was hunted by a wire snare. An arrow indicates a wire snare.

depreciate during the past 20 years. Recently, the number of available workers has decreased in the village and many men have moved to larger towns to obtain cash incomes instead of remaining in the villages; in particular, many youth emigrated from Wamba after the war. Economic deterioration has accelerated the movement of people, and the people who have returned from urban areas to Wamba have new habits. They may have accepted the idea that the bonobo flesh can be eaten, and it is possible that taboos against eating bonobos will disappear from Wamba in the near future.

Support for the Local Community and Conservation of Bonobos

From the beginning of the research, we have supported public welfare to enhance the quality of life of the local people in Wamba and the surrounding areas. For example, we have maintained a primary school, contributed ballpoint pens, notebooks, blackboards and footballs for the pupils, and developed the educational program. We have provided materials and wages for workers to maintain a main road, bridges, and an airstrip in good condition. We built a dispensary for villagers. Moreover, we are building a medical facility and will provide appropriate medical equipment.

However, there is no end to the demands of the local people. In particular, they expect increased community development because they have received information regarding projects of large nongovernmental organizations (NGOs) moving into the area. They believe they will be able to receive large monetary donations from the NGOs. Most NGOs, however, do not know about local customs, cultures, nature, and people, and are rarely observed to be active in the Djolu area. Sometimes, the NGOs believe they are doing good things for the local people. They invest large sums of money for these projects, but much of the funds are not used to benefit local activities. As a result, the demands by villagers on us are escalating because they mistakenly believe that we are a large NGO and are granted large amounts of money. Unfortunately, we are just a handful of researchers, whereas the local community is a large population.

What more can be done? We understand the importance of conservation, and we would like to make every possible effort to preserve bonobos, in particular, and the local environment in general. Cooperation from the local community is indispensable for success in bonobo and environment conservation. At this time, however, local people are pressed with daily life for their own survival. Deforestation and poaching may not stop unless the quality of life of the local people is enhanced. We support their lives little by little at the least. We are organizing to build a clinic in Wamba, maintain the main road and bridges between Djolu and Wamba, and repair the airstrip to good condition at Djolu. We are working to improve the education program in the locality too, especially for the youngest generation. We believe that conservation activities are not temporal, using time and money and leaving nothing. Conservation should involve continuous activities over the next generation and into the future.

One of the things that we do is spread conservation information to the people of DRC and abroad. The natural environment is important for us and all living things, but human activity in the recent past has forced many species to the brink of disappearance. Evidence that has emerged over the past decades from a variety of disciplines has shown that the distance separating bonobos from humans is smaller than ever before envisaged. Long-term studies of wild bonobos have irreversibly reduced the man-made gap between bonobos and ourselves. As a result, most of the observed differences now appear quantitative rather than qualitative in nature. We must push forward conservation activities for the co-existence of bonobos and human beings.

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