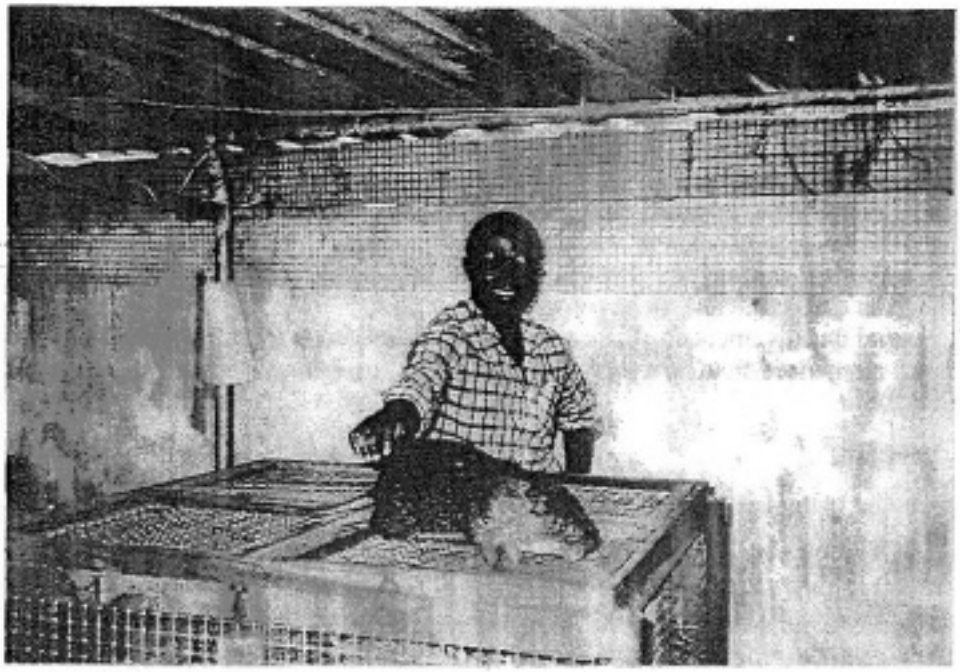

Figure. 2. A 10-month old grasscutter outside its cage.

In West Africa, the meat of grasscutters is preferred to the meat of any kind of domestic animal or commercially available game (Martin, 1985; Baptist and Mensah, 1986); furthermore, it is one of the few species of bushmeat not to be associated with any taboo or prohibition as a food item in African culture (Ajayi, 1974; Ajayi, 1978; Cooper, 1995). This is not the case in Central Africa, however, where some tribes kill the grasscutter because they consider it as a crop pest, but do not use it as meat. Nevertheless, grasscutter meat remains the prime choice among game species in tropical Africa (Den Hartog and De Vos, 1973; Van de Velde, 1991). Everything from this species of rodent can be used by some West African tribes. These people burn its hair and the ash powder is used as a lotion with healing properties. Even the faeces, taken directly from the caecum and colon, are used to

Table 1. Main zootechnical parameters in grasscutter production

Gestation length	152 ± 2 days[1]
Random litter size	4 ± 0.13 animals
Sex ratio	1:1
Random weight at birth	135.9 ± 1.0 g
Annual random abortion rate	2%
Annual random stillborn rate	3.4%
Random daily weight gain	12 g[2]
Consumption index (food/weight) gain	4.5:1[2]

Sources: Yewadan and Schrage (1992), except: [1]Mensah and Baptist (1986) and [2]Mensah (1991).

season sauces for some African dishes. The taste and tenderness of the grasscutter's meat make it a very sought-after and expensive dish in the restaurants of large urban centres in Africa (Kyle, 1987). In some countries the price of grasscutter meat is 3–4 times that of beef (Martin, 1985; Steel, 1994).

Besides its gastonomic reputation, the biological value of the grasscutter meat is greater than that of most domestic animals. Its protein content is higher than that of chicken, rabbit or guinea pig (Asibey, 1974a; Malaisse and Parent, 1982). Ajayi and Tewe (1980) showed that beef, raw lamb and pork had a higher fat content than grasscutter meat. The relative nutritional value of the species is illustrated in Tables 2 and 3.

Economic and environmental importance

In West Africa, the number of grasscutters hunted per year is estimated to be 80 million, the equivalent of 300 000 metric tons of meat. If only half of this amount were sold in the market, it would generate an income of 320 000 million FCFA (over $1103 million US if $1 US = 290 FCFA). Despite this high level of exploitation, grasscutters are far from being endangered. They have adapted to newly deforested areas, where food and industrial crops are grown, and to secondary savannahs formed as a result of forest destruction. The species are probably increasing in numbers throughout Africa. In Central Africa, the contribution of grasscutter meat to the economy has not yet been realized. However, according to a WWF study (Steel, 1994), over 17 million kg of bushmeat are consumed per year in Gabon, generating an income of over 15 540 million FCFA (over $50 million US). Grasscutter rearing might, therefore, be a profitable activity in this and other Central African areas.

Grasscutter production could serve both to generate income and to decrease the effect of hunting on other endangered wildlife populations. This might be particularly important in buffer zones around protected areas where law enforcement and anti-poaching surveillance need to be particularly strong. However, further studies and reliable data are needed to substantiate such a beneficial environmental effect.

Advantages of promoting grasscutter production

Grasscutter production can be an economic benefit in African countries for the following reasons:

(i) There is a high demand for game for cultural and other reasons.

Table 2. Comparison of liveweight, dressing-out percentage and flesh-to-bone ratio in the grasscutter and other species

Parameters	Grasscutter[1]	Guinea pig[2]	Rabbit[3]	Chicken[4]
Liveweight (g)	5872	800	2670	–
Dressed carcass weight (g)	3746	–	1550	–
Dressing-out percentage	63.8	65.0	58.0	70.0
Flesh-to-bone ratio	3.5:1	–	4.7:1	4.9:1

Sources: [1]Ajayi and Tewe (1980); [2]Abanto (1981); [3]Schlolaut and Lange (1982); [4]Vogt (1967).

Table 3. Approximate composition of 100 g of fresh meat from the grasscutter, guinea pig, rabbit and chicken

Parameter	Grasscutter[1]	Grasscutter[2]	Grasscutter[3]	Guinea pig[4]	Rabbit[5]	Chicken[6]
Moisture (mg)	72.3	69.7	52.0	70.6	65.8	68.6
Crude protein (mg)	22.7	18.8	28.0	20.3	19.4	20.6
Fat (mg)	4.2	8.9	16.8	7.8	9.8	5.6
Ash (%)	0.9	1.2	2.9	0.8	–	–
Fe (mg)	2.8	1.06	20.0	–	–	4.2
Ca (mg)	83.0	12.3	320.0	–	–	26.0
P (mg)	110.0	1.05	380.0	–	–	260.0

Sources: [1]Asibey (1974a); [2]Ajayi and Tewe (1980); [3]Malaisse and Parent (1982); [4]Abanto (1981); [5]Scholaut (1982); [6]Vogt (1987) and Scholtyssek (1978).

(ii) Prices available to grasscutter farmers can be high, particularly in markets in urban centres (Asibey, 1974a; Martin, 1985).
(iii) An increasing demand for bushmeat often follows urbanization, which leads in turn to depletion of game in ever-decreasing hunting areas.
(iv) It could lead to greater control of hunting by law enforcement, as over-exploitation of wildlife increases.

However, even though the management of grasscutters is becoming more refined, they remain a small component of animal production under rural conditions. The only grasscutter farm which is known to make a significant profit is located in Kpalimé Togo. The owner of this farm replaced all his rabbits with grasscutters. Further research is needed to evaluate the true economic impact of grasscutter production on rural populations.

Nevertheless, there are other advantages in promoting farming of grasscutters among rural communities:

(i) It encourages diversification of agricultural income for village family producers in rural or peri-urban areas.
(ii) It contributes a high protein source to the diet of undernourished populations.
(iii) It helps to regulate commercialization of grasscutter meat and better satisfaction of the demand for game.
(iv) Captive propagation helps to protect plant cover that is threatened by bushfires on hunting operations during the dry season (Asibey, 1974a; Ganmavo, 1992).
(v) It may reduce hunting and trapping pressure on endangered wildlife populations.
(vi) Grasscutter by-products can be recycled and used for other purposes such as a source of food in pisciculture, as a crop fertilizer or for rearing earthworms (Hardouin, 1995).

A method to develop grasscutter production

There is now sufficient knowledge to develop rural grasscutter farms in any African country (Yewadan and Schrage, 1992). However, such an enterprise still requires training of farmers. Therefore, the authors recommend first of all that the chosen area must be