

### **8.9. Conservation of local races of livestock (objectives a, b and d)**

**Background and justification:** The Sudanese local races of livestock are threatened due to breeding with imported races. Conservation of pure races of different species of indigenous livestock is urgently needed.

**Objectives and methodology:** To conserve representative units of different races of different indigenous species of livestock in the Sudan.

**Lead Agency:** Ministry of Animal Wealth.

**Estimated cost:** US \$ 1, 500, 000

**B.10. Conservation and sustainable utilization of agrobiodiversity (objectives b and d)**

**Background and justification:** Due to introduced improved seeds several local varieties are being lost. The need to conserve local varieties should be emphasized for future development of agriculture in Sudan.

**Objectives and methodology:**

Conservation and sustainable utilization of agro-biodiversity in Sudan.

**Lead Agency:** MAF

**Estimated cost:** as in table 7.

**Table 7. Proposed projects for the conservation and sustainable utilization of agro-biodiversity in Sudan**

Project	Costs (US\$)
Establishment of national plant genetic resources center (buildings and equipment)	4,000,000
Establishment of the regional plant genetic resources units (5units)	2,000,000
Collection of crop genetic resources	1,000,000
Multiplication, regeneration and characterization of crop genetic resources	600,000
In-situ conservation (including on-farm conservation)	200,000
Establishment of in-vitro conservation facility and molecular biology laboratory	4,000,000
Documentation of crop genetic resources (establishment of networks and publication of information)	500,000
Training (including post graduate studies and other short and long term training)	2,000,000
National coordination and awareness activities (meeting, workshops, media, ...etc.)	500,000
<b>Total</b>	<b>14,800,000</b>

### **B.11. Establishment of national Center for biotechnology (objectives a, b and d)**

**Background and justification:** Agenda 21 is a participatory plan of action jointly formulated and agreed upon by the world community at the earth summit in Rio, Brazil 1992. It proposes a number of plans and action programs aimed towards sustainable development. Chapter 16 of the Agenda highlights the significance of biotechnology in improvement of environmental protection, food quality and availability, feed and renewable energy, human health and biosafety in application and transfer of biotechnology.

An early attention to the potential advantages of biotechnology is indispensable if Sudan is to evolve into a modern state. Biotechnology represents a new pervasive technology but simple and mostly appropriate to a developing country like Sudan where many of its problems relate to poor conservation of environment, self-sufficiency in food and energy. Therefore, it is high time to call for the establishment of a national Centre for biotechnology that essentially aims to promote:

- Interest and awareness of the potential advantages of biotechnology application particularly with reference to conservation and biodiversity aspects;
- Capacity building by development of training and research programs in areas of biotechnology related to biodiversity and conservation of environment;
- Interaction and collaboration between national/international institutions that work in the fields of biotechnology and biodiversity e.g. gene banks, plant tissue culture labs., centers of animal breeding and artificial insemination etc;
- Programs for the biodiversity assessment and conservation of biological specimens exploited in biotechnology applications with special emphasis on microflora;
- Implementation of new rDNA technology in survey studies of biodiversity.
- Investment in biotechnology areas that aims at appropriate utilization and conservation of biological resources; and
- Legislations related to aspects of biosafety and biopiracy.

**Lead agency:** University of Khartoum.

#### **Estimated Cost**

-	Building	\$ 140, 000
-	Equipment	\$ 140, 000
	Total	\$ 280, 000

## 8.12. Reducing impact on biodiversity from civil strife:

### Background and justification:

Sudan's biological resources suffer from long time civil wars and associated phenomena as much as refugees movements and settling of population. It is important that the issues of biodiversity conservation and sustainable use are made part of the negotiation's in conflict resolution and in resettling moving population from within and outside Sudan.

### Objectives and Methodology:

- To bring to a halt the destruction of biological diversity caused by wars and civil strife
- Detailed assessment on the impact on biodiversity from civil strife and develop idea and actions to reduce impacts in effected areas;
- Raise awareness on impact of civil strife on biodiversity; and
- Initiate negotiations among relevant stakeholders and supporting parties on biodiversity management and conservation in war and civil strife torn areas.

Lead agency: UN agencies such as UNHCR and international organizations.

Estimated costs \$ 40,000

The proposed projects are summarized in table 8.

**Table 8: Summary of Proposed Projects:**

Project Title	Estimated Costs (US \$)
Organizational set-up for conservation of biodiversity	1,000,000
Raising awareness of all stakeholders at all levels of biodiversity and its importance	1,000,000
Strategic planning for conservation of natural resources	3,000,000
Exploration and documentation of flora and fauna of Darfur, central clay plains, River Nile, Northern, Equatoria, Bahr El Ghazal and Upper Nile regions	2,000,000
Conservation of representative areas of various ecosystems	11,000,000
Rangelands conservation	1,000,000
Ex-situ conservation	41,000,000
Capacity building in systematics	1,500,000
Conservation of local races of livestock	1,500,000
Conservation and sustainable utilization of agro-biodiversity	14,800,000
Establishment of national Center for biotechnology	280,000
Reducing impact on biodiversity from civil strife	40,000,000
<b>Estimated Total Cost</b>	<b>118,800,000</b>