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Y LA ALIMENTACION

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## ***AFRICOVER - East Africa***

Land Cover Mapping of E. Africa Based on Satellite Remote Sensing

FAO Trust Fund Project GCP/RAF/287/ITA

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# SECOND NATIONAL CO-ORDINATORS MEETING

## 15-17 February 1999

### Nairobi, Kenya

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MINUTES

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## **1. APPOINTMENT OF CHAIRMAN AND RAPPORTEUR**

The meeting started with the appointments of the chairmen and rapporteurs.

The chairmen was appointed on a rotation basis:

1<sup>st</sup> day: the National Coordinator for Kenya, Mr. Hesbon A. Mwendwa

2<sup>nd</sup> day: the National Coordinator for Uganda, Dr Yafesi Okia

3<sup>rd</sup> day: the National Coordinator for Tanzania, Mr. Lazarus Mollel

Mr. Cyprien Hakizimana, the National Coordinator for Burundi and Rob Postma, Project Officer of the Africover Eastern Africa module, were appointed as rapporteurs

The appointments were followed by a self-introduction by all participants.

The list of participants is included in Annex XIX.

## **2. OPENING**

### **2.1 Official Opening**

The meeting was officially opened by the representative of the Permanent Secretary of the Ministry of Planning and National Development of the Government of Kenya, Mr. Alex K.A. Ketter, Deputy Secretary.

The Deputy Secretary presented the speech of the Permanent Secretary Mr Edwin Osundwa saying that the project support in Sub-Saharan Africa had in the past failed to produce the desired results because it did not involve the countries and the people effectively. He said dynamic weather phenomena like El Nino and La Nina required comprehensive information databases to facilitate policy and management interventions. The information could be used in early warning systems, forest and natural resource monitoring and planning water catchment management, biodiversity and climate change.

### **2.2 The opening addresses made by the various Guests-of Honour,**

#### **(a) H.E The Ambassador Dr Alberto Balboni, Italian Embassy**

Dr Balboni indicated that Italy is ready to consider further funding of appropriate technology programs to assist African governments in collecting, processing and managing data necessary for planning activities. The Italian Government will support African countries develop appropriate technologies for resource exploitation and management. He said the Africover project could help African countries in their national planning by providing a solid basis of information on which reliable planning could be built. The Ambassador of Italy to Kenya also reaffirmed his country's commitment to the project and to its future development.

**(b) Mr. Daniel Gustafson, FAO Representative, Kenya**

Mr Gustafson indicated the importance of the project's efforts for both Kenya and Somalia of which he is the FAO Representative. He stressed that the combination and integration of both the regional and national approach of the project is one of its major strengths. The national capacity building for the elaborated use of the data in combination with the sharing of resources to cope with regional issues provides the project with an additional value, the results being a homogenized land cover and environmental dataset for the eastern African region and a decrease of the overall costs for the development. Mr Gustafson pointed out that there are a large number of opportunities for the use of the project's data within Kenya and Somalia as shown by the AGROSCENE project.

**(c) Prof Simon Ndyetabula, Director General, Regional Center for Services in Surveying Mapping and Remote Sensing (RCSSMRS)**

Prof Ndyetabula stressed that the methodology and tools being developed at the project are allowing the development of a unique source of detailed and reliable resource information at both national and regional level that is aimed to solve this major structural problem. This became extremely important both at national level, fostering the development of each participating country, and at regional level, having crucial projects expecting to use comparable data such as the Nile Basin, Lake Victoria, Great Horn and IGAD projects. The expected results of this project will give the chance to each country participating to exchange, whenever they want, homogeneous and comparable data in all project areas for developing common models and methodologies.

The written speeches are included in Annex II

**3. ADOPTION OF THE AGENDA**

The Agenda was amended and adopted to include any matters arising from the previous meeting.

**4. MATTERS ARISING FROM THE PREVIOUS MEETING**

A number of matters arising from the minutes of the first National Coordinator Meeting (**NCM**) were considered and clarifications and comments were provided by the Chief Technical Adviser (**CTA**) of the AFRICOVER Eastern Africa project. The NCM requested the project to provide an annotated version of the minutes before the end of the meeting.

The annotated minutes of the first NCM answering to the remarks of the NCM members was completed and is included in Annex I.

## **5. PRESENTATION OF AFRICOVER.**

### **5.1 Actual Presentation**

The CTA presented the following topics regarding the Africover Eastern Africa module of the AFRICOVER initiative:

#### **(a) Background**

The background of the AFRICOVER initiative includes activities performed in the design phase to evaluate the feasibility of the Eastern Africa module, i.e. user assessment; the need for homogenized data; the need for institutional capacity building.

#### **(b) Facts on the project**

The basic facts of the Africover Eastern Africa project includes the major features describing the project such as the participating countries and the countries in an advanced stage of negotiating concerning future involvement. The total area to be mapped, the average costs for interpretation and the expected training initiatives were illustrated.

#### **(c) Projects objectives**

The main objectives of the project are to produce a current regional assessment of land cover of Eastern African region as a basis for regional and national level planning. Another objective is the development of a network of trained personnel in the utilization of remote sensing and Geographical Information Systems (**GIS**) technologies for land cover inventory and monitoring.

#### **(d) Major activities**

The major activities include the implementation of land cover interpretation based on the FAO Land Cover Classification System (**LCCS**), the development of a digital database of land cover units of Eastern Africa, the development of different software tools and the training of national experts.

#### **(e) Expenditure / commitments up to date**

A synoptic overview of present status of the expenditure/budget was presented.

#### **(f) Workplan up to the end of the project**

A presentation of a tentative workplan covering all activities foreseen in the project showed the need to extend the project till the end of the year 2000.

#### **(g) Budget up to the end of the project**

A tentative budget was formulated showing the available resources and funding needed to complete the project's objectives. It was stated that the cumulated delay for the accomplishment of the project is one year and that the expected budget for the accomplishment of the project is USD 2,507,770. This means a negative balance in the range of USD 400,000 in reference to the available budget being USD 2,117,463.

## **(h) Conclusions**

The CTA concluded that there is a need to better tune the project strategies in the framework of the original immediate objectives and expected outputs. The Africover Data Base is developed by the National experts, uses a user-friendly high technology approach and can be used at low cost. The national experts will have an on the job training on this database that is highly sustainable through the capacity of each country and easy to operate and to maintain.

The full presentation is included in Annex III.

## **5.2 Remarks/Recommendations/Observations**

The presentation of the CTA was followed by a number of remarks and questions by the NCM. Answering to the specific questions, the following remarks / recommendations were issued:

- (a) The members of the NCM expressed concerns about the character of the meeting in relation to its mandate and its authority on decision making with respect to the project's budget.
- (b) The NCM discussed the adverse implications of the negative balance in the tentative budget as indicated by the CTA and the needed extension of the project execution time to finalize its planned activities. Recommendation was made by the NCM to FAO and the donor, to make all possible effort to extend the project activities to the end of the year 2000. Therefore the Italian Government was recommended to make additional funding available to assure the realization of the project's main objectives. In addition, the NCM requested the donor to consider possible future activities beyond the present project implementation phase.
- (c) Since the NCM is currently not in a position to discuss the presented tentative budget, the project was requested to deliver a detailed workplan and annotated budget by the end of March 1999. The workplan should include different scenarios for the forthcoming activities and the related budgetary options should be mentioned. The proposed workplan and annotated and cross-referenced version of the related budget will be presented to the NFPI's for comments and then forwarded through FAO to the Italian Government for consideration and approval.
- (d) The project management is requested to review increasing the number of photointerpreters per country – it was stated that this would be considered on a country by country basis according to budgetary constraints.
- (e) In case the project experiences the need for additional assistance from the NFPI's, a Letter of Agreement could be signed between the FAO for the project and the individual participating countries for the updating and digitization of road networks, hydrography and toponomy.
- (f) The NCM agreed that the NFPI's of the different participating countries will coordinate the selection of candidates who will participate in the regional

training for decision makers to be organized by the project. Apart from this extended training that will be given at the projects premises at the end of the actual project implementation phase, additional workshops / training could be planned in the respective countries in order to extend the outreach of the use of the Multipurpose Africover Database for Environmental resources and its use in relevant applications to the different concerned national decision making bodies.

- (g) In response to the intervention of the National Coordinator (**NC**) of Sudan regarding the proposed considerable timetable of the project for the procurement of the large selection of the country's relevant imagery, the project stated that the current schedule for the procurement (selection of acquisition dates; development; geocoding; printing) has been planned according to realistic processing and delivery constraints. The project is closely following up the procurement activities to assure the finalization of the interpretation activities of Sudan within the current project time frame. If any unexpected difficulties would further prolong the delivery of the imagery, the project proposes to recruit additional national photointerpreters.
- (h) Answering to a proposal from the NC from Burundi to have more simultaneous interpretation activities being executed at the project's premises in order to reduce the projects planned execution time frame, the project management responded that there are logistical limitations (i.e. the current availability of physical space in the offices and available human resources within the project for training and follow-up) within the project that hamper the organization of parallel interpretation activities by different participating countries in the project offices in Nairobi. The project added that the proposed schedule for the interpretation of the successive countries is optimized to assure intensive training and qualitative data output.

## **6. TECHNICAL PRESENTATION OF AFRICOVER.**

### **6.1 Actual Presentation**

The Senior Mapping Expert of the Africover Eastern Africa project presented the following topics:

#### **a) Historical background and technical details of the Multipurpose Africover Database for Environmental resources (MADE).**

Based on the fact that Land Cover is the basic information for environmental databases it has always been considered the key geographically explicit feature which other disciplines may use as geographical reference. The historical trend of seeing specific databases being developed for different disciplines has changed in recent years towards a general demand for geographically and conceptually comparable and compatible data. This has been influenced by the improved computing capacities (both in hardware and software) and the international awareness for the need of more detailed and standardized information. The Africover Eastern Africa module combines these important factors in MADE: a set of detailed/homogeneous land cover and environmental information that can be used by a large community of specific end users is created using a specific set of tools. This database is functional to the new

database trends: it reduces costs and improves the efficiency at local, national and regional level.

**b) Demonstration basic functions Land Cover Classification System (LCCS)**

The FAO LCCS is a new concept of land cover classification. It is flexible; it is able to describe worldwide any type of land cover feature at any scale or level of detail and with an absolute level of standardization. It can be considered as a new worldwide common language of land cover between different countries and different type of final users.

**c) Demonstration basic functions Africover Interpretation and Mapping system (AIMs)**

AIMs is a new concept of an on-screen interpretation software that combines the advantages of the digital automated classification and traditional visual interpretation in a synergetic way. It improves the interactive use of ancillary data and any other type of data. It is the present and future of the Africover mapping activities. It is actually used to improve the visual interpretation and will be extensively used to update the land cover and topographic database. Existing historic ancillary data will be revitalized to produce specific monitoring applications.

**d) Overview concept Africover Database Gateway (ADG) and Africover Interactive Database (AID) for interpretation**

ADG will be user-friendly software that will allow an easy and fast recombination of the Land Cover polygons not only by class names, but also, in a much more flexible and detailed way, by classifiers.

AID will be interactive software to guide and homogenize the land cover interpretation with practical examples of how different classes are represented on different data sources and in different seasons and how they correlate with other information. Additionally it will include guidelines for the interpretation within a specific geographical context.

**e) Overview of the applications of the Multipurpose Africover Database for Environmental Resources**

An overview of possible use of the Africover data for standard applications on forestry, agriculture, rangeland, vegetation ecology statistics, natural resources planning and specific ones on animal habitat, domestic livestock disease, trees outside the forest assessment and potential desertification zones assessment.

The full presentation is included in Annex IV.

## **6.2 Remarks / recommendations / observations**

The presentation of the Senior Mapping Officer included the demonstration of LCCS and AIMs softwares. The presentation was followed by a number of remarks and questions by the NCM. Answering to the specific questions, the following remarks/recommendations were issued:

- (a) Concerning the softwares produced by the AFRICOVER Eastern Africa module, the project confirmed that AIMs is fully operational in the project and being fine-tuned for the introduction of the software in the interpretation production chain. AIMs will prove to be of extreme importance for the NFPI

when used for the updates of the AFRICOVER and related databases. On inquiries from the NCM on the availability of LCCS for the NFPI's, the project stated that as soon as the Land Cover Classification System publication is issued (April 1999), copies of both document and software will be forwarded to the NFPI's.

- (b) The NCM expressed its interest in acquiring the AFRICOVER database at a larger scale than the current scale of 1:200.000. Especially for regions with specific interest to the participating countries it was stated that the map production on a larger scale would be preferred. The project pointed out that a more detailed database could be made in a later phase based on the information produced during the current phase. The project confirmed that countries with a smaller coverage (Rwanda and Burundi) will be mapped on a scale of 1:100.000.
- (c) The vector data of the AFRICOVER database will be in a compatible format for most S/W applications: ArcInfo Generate / Shape - files.
- (d) Members of the NCM demonstrated a need for capacity building within the NFPI's and other members of the different NWG's in order to maximize the use of the future databases. The project confirmed that the following equipment (H/W and S/W) currently in use by AFRICOVER Eastern Africa will be transferred to the NFPI's at the conclusion of the production activities at the project premises :
  - Fujitsu PC 266 MHz; Dual Pentium Processor; 4 Gb HDD; 128 Mb RAM; 24x CD ROM; 4 Mb Graphic board; 21" Hitachi monitor; 12"x12" Calcomp digitizer
  - One package of AIMS with hardware key

## 7. COUNTRY PRESENTATIONS

### 7.1 Actual presentations

Country reports on the status and progress of national activities were presented by the National Co-ordinators of the following countries:

- (a) The Geographical Institute of **Burundi** (IGEBU) is the focal point institution of Africover E. Africa Project. This institution reports to the Ministry of Environment.

At the national level, the National Working Group has been established and has already met once. The members of NWG have been sensitised in order to follow closely the project's activities.

The basic maps at the scale of 1:50,000 are already at the project headquarters. The CVs of Candidates for photo-interpretation have already been sent.

A computer and a modem have been received from the project. The e-mail has to be installed in the near future. A sum of US\$1500 out of US\$2500 budgeted has been given to NFPI. The FPI wishes to be regularly informed about the

progress of the project and requests a printer to complete the computer equipment.

- (b) In 1998, the AFRICOVER Project in **Democratic Republic of Congo** got a new National Co-ordinator in the name of Mr. KANU MBIZI. He is a Director of the Permanent Service for Inventory and Forestry Management in the Ministry of Environment, Nature Conservation, Fishery and Forestry. Besides the establishment of the National Institution of contact and co-ordination, Africover DRC Project has not effectively started.

The National working group has not yet been established, but institutions, which will appoint their members, have been identified. The war in DRC could not allow the start of new activities. The NFPI signed the Letter of Agreement in August 1998 and is waiting for the payment so that the National Working Group starts its activities as well as the installation of e-mail.

- (c) Due to unforeseen circumstances the delegation from **Egypt** was forced to cancel their trip to Nairobi at the latest hour and therefore was unable to participate with the second NCM. They have forwarded their sincere apologies for their absence and confirmed their interest to be updated on the outcomes of the meeting. They welcomed the visit of the tripartite mission to Egypt during the last week of February 1999 during which they would like to present the status and progress of their activities relating to the AFRICOVER program and will demonstrate which applications of the data will be developed.
- (d) Two informal meetings of the NWG in **Kenya** were held in 1998 and various issues were discussed. The CVs for Geodesy (Geometry) Consultant will be submitted to the Project to facilitate selection of a consultant.

Kenya recommended the continuation of the project into a second phase that would concentrate on strengthening of national capacities, institutions and work towards development of decision support systems in the use of the data in natural resource and environment management.

The ability of a wide range of users to use the database should be considered by the project, this should include those with computer capabilities, and those without.

- (e) **Rwanda** has recently joined the AFRICOVER Project and designated the "National Commission on Natural Resources" of the Ministry of Agriculture, Livestock, Environment and Rural Development as the National Focal Point Institution.

A National Co-ordinator was nominated, and the Letter of Agreement document was signed. The planning of activities is in progress.

- (f) The NWG of **Sudan** held two meetings one on 31 December 1997 when the members were enlightened on the Project's objectives, organisation and work plan. Image interpreters were selected and their CVs sent to the Project's office. A second NWG meeting was held in July 1998 and approved interpreters selection. Maps have been submitted to the project's office and the control points co-ordinates and descriptions would be provided by NIMA when requested. The report stressed the importance of the immediate start of the interpretation of Sudan's imagery in view of the large amount of work involved

and the urgent need for the output, promotion of contacts between the project's head office in Nairobi, and the NWG in Sudan was strongly recommended. Decision makers training has been suggested to start.

- (g) **Tanzania** has continued to supply ancillary data needed for formation of the country database. Six national interpreters were selected and participated in preliminary interpretation of land cover, shortly they shall start field certification. The NWG convened once for briefing members on the status of the project.

From the project, e-mail facilities were received and installed and it is operational since October 1998 with the address: [smd@raha.com](mailto:smd@raha.com)

However, there is need for regular updating of the NFPI about the progress of the project and facilitation of reimbursement of funds from FAO representatives. This year, emphasis shall be on awareness of the project results to would be users. In this regard it is important for the CTA to visit the country for launching and sensitising the awareness campaign.

- i. The **Ugandan** delegation presented the state of the national network. The data for the three components of the geodetic network, namely: Primary, secondary and tertiary was compiled and plotted on separate sheets. The presentation included map series available at the National Working Group institutions, which could be used as ancillary data

The full presentations are included in Annex V to XI.

## 7.2 Remarks/Recommendations/Observations

After the presentations the NCM made the following remarks/recommendations:

- (a) The NCM concluded that a more intense contact between the NFPI's and the project, in the form of an extended communication, will contribute in having a better overall project performance. The NCM requested the project to provide quarterly reports to monitor the project's progress. This will assist the NFPI in keeping the members of the NWG up to date about the ongoing activities. The project agreed with the proposal that the first coming report should be issued by the end of March 1999. In order to reinforce the linkages between the project and the NFPI's it was agreed that the CTA will elaborate a program with the NFPI's for the projects representation at the different NWG's to be held this year.
- (b) The NFPI's are requested to provide the project with a complete list of available ancillary data (thematic maps, Aerial photographs, etc...) for their respective countries. If possible the data should be made available free of charge. If charges are unavoidable, they should be documented. In order to have a complete base for the development of the list of classes for a country, the ancillary data should be available at the project offices before the start of the interpretation activities.
- (c) The Letters of Agreement on administrative costs with the NFPI included 2 payments: 1.500 US\$ and 1.000US\$. Although available at the respective FAO Representations the second payment did not take place. The project management and CPO will arrange for further payments.

- (d) Members of the NCM requested the project to provide the NFPI's with a printer to be used for distributing project info to the NWG and other official communications. The project would consider the request and will include it in the tentative project budget and decide on the issue depending on budget approval and validation.

## **8. GEODESY AND GEOMETRY PRESENTATIONS**

### **8.1 Geodetic status of each country in the region and means of homogenization**

The consultant from RCSSMRS reported on the activities concerning the establishment of a Geometric Committee that will look into the homogenization of the geodetic networks of the participating countries. The Status of the geodetic networks are described and a summary was given of the used Geodetic Datums and Ellipsoids and why they should be harmonized.

The full presentation is included in Annex XIV.

### **8.2 Remarks/Recommendations/Observations**

After the presentation of the consultant from RCSSMRS the discussion resulted in the answering to specific questions. The following remarks/recommendations were issued:

The National Coordinators recognized the urgent need to establish a Regional Geodetic Committee.

The Regional Geodetic Committee shall be lead/chaired by a Regional Coordinator who was nominated by the NCM.

The Terms of Reference of the Regional Coordinator are in Annex XII.

The Regional Geodetic Committee shall be formally established by the end of March 1999.

The Regional Geodetic Committee shall comprise nominated representatives from each country – national nominations have been received from Kenya, Tanzania, Uganda and Sudan. Further nominations from the NFPI 's are required from Rwanda, Burundi, Democratic Republic of Congo, Egypt and Somalia by the middle of March 1999.

The Terms of Reference of the National Representatives are in Annex XIII.

However, the national representatives of each country will prepare a national paper on the status of the geodetic network in each country that will be reviewed and summarized by the Regional Co-ordinator. The Regional Geodetic Committee shall meet within three months of this NCM to develop a systematic plan of action for inter alia:

- (i) For calculating the transformation parameters from local datum to WGS84 using GPS.

- (ii) Further validation of the image geometric correction procedures used by the project.

The Regional Geodetic Committee invites recognized International bodies to support its deliberations e.g. - NIMA, IFAC, and Government of Italy.

### **8.3 Presentation On New Evolutions In Geometric Correction Of Imagery**

#### **8.3.1 Actual presentation**

The technical officer, SDRN, FAO Headquarters presented the latest evolutions in geometric correction of satellite imageries used by the project.

The International Geodetic Working Group has established the geometric standards for the preparation of the image base (for interpretation). Planimetric accuracy of 50 -100metres, elevation accuracies (geometrically) 100 -150metres (thematically) 50 -100metres.

The approaches are of three types, each of which has inherently different costs, accuracies and qualities.

Image to map (applied in Somalia, Kenya and part of E. Egypt) – Transformed into UTM WGS84 where possible. The accuracy of this approach has not been independently validated and the NCM recommended that this should be undertaken. The quality of this approach is therefore unknown, however, as the approach uses existing maps the errors of these maps are inherently retained. The approach does not facilitate the creation of a harmonized geometric corrected base for the whole project area. The cost of geometric correction is approx. \$2000 per scene. It does not provide a solution for the computation of the shift between national and WGS 84 datum.

Image to Image – using Russian approach – this technique was applied in the Western Desert of Egypt and independently validated. Transformed into UTM WGS84. The approach resulted in accuracies that were just outside the tolerances set by the International Working Group i.e. 140metres. The approach does provide for orthorectification (correction for height distortion) but at additional cost. The geometric correction cost (X/Y) was \$2200 per scene. The approach does provide a solution for the computation of the shift between national and WGS84 datum but the accuracies are not indicative of a high level of precision

NASA/NIMA approach –a new approach initiated mid 1998-from which Africover project can be a beneficiary – it involves a massive block correction using independent NIMA control and orthorectification using DTED Level 1 data-transformed into UTM WGS84. The approach was independently validated in Egypt and achieved accuracies of 48mteres in X and 32 meters in Y. - i.e. within the accuracies specified by the International Geodetic Working Group. The approach corrects for height distortions and meets both the planimetric and the elevation accuracies specified. It will provide for a harmonized geometric transformation into WGS 84 across the whole project area The cost per scene is approx. \$350 plus film and print.

#### **8.3.2 Recommendations**

- (i) The NCM, recognizing the significant improvement in cost, accuracies and the ability to correct for height variations, and the generation of a harmonized base for the whole project area recommends the continuity of the approach of image to image correlation using the NASA/NIMA approach.
- (ii) As the NASA/ NIMA independent control from the above project is not available to the project the NCM recognizes the need to develop a procedure for calculating the shift from local datum to WGS 84 using GPS - this procedure has to be pursued through the Regional Geodetic Working Group. The need for this has to be assessed based on the results of (i) above.

The full presentation is included in Annex XV to XVIII.

## **9. DATA POLICY FOR THE MANAGEMENT OF THE AFRICOVER DATABASES**

### **9.1 The following issues concerning data policy were presented for discussion by the CTA to the members of the NCM:**

- (a) Ownership of data
- (b) Method of dissemination of digital data and range of users : national – international
- (c) Copyright / licenses
- (d) Pricing

### **9.2 Remarks/Recommendations/Observations**

Answering to specific questions, the following remarks/recommendations were made:

- (a) The NCM discussed and adopted that the NFPI has the ownership of the national data and that all use of the data on national purposes will be monitored by the NFPI. The FAO recognizes the national ownership of the database and will take no steps to control the data. It was further stated that Land Cover data on a scale of 1:200.000 as produced by the project was not of any sensitive matter to the participating countries and that the NFPI' s would like to monitor how the data is used in order to elaborate its usefulness.
- (b) The NCM agreed that the regional aspect of the data presents a tremendous added value to its operational use because of the homogenized and harmonized character of the data and its usefulness on such issues as transboundary aspects of land cover changes, biodiversity, etc. It was therefore proposed to validate these aspects by assuring a maximum feasible access to the data for potential users. In this context the NCM stated that FAO can make unlimited use of the full database for FAO related purposes and that the Italian Government is allowed full access to the data. Furthermore it was agreed that on regional applications, the FAO can forward the data to international organizations based on a Memorandum of Understanding with the NFPI. International organizations will be allowed the use of a regional database with combined information on a smaller scale. The use of the full database on national level will need confirmation from the respective NFPI' s. It

was also agreed to have a combined dataset on a regional level for the 3 participating countries of East Africa.

- (c) The NCM agreed that the raw satellite data will be owned by the NFPI and took note that it is covered by EOSAT copyright restrictions; the corrected data has no such restrictions and multiple copies can be made.
- (d) On the pricing of the data the NCM agreed the following: The NFPI's proposed to charge costs for the dissemination of the data. The charges will cover the update and production and transfer media for the data. However, no actual pricing policy was decided. A proposal to have a discriminatory pricing structure was made: at low costs/free for public agencies; at fixed prices for the private sector. The NFPI will have the exclusive right to commercialize the data.
- (e) It was agreed to verify the national policies on the distribution of digital data before an agreement on the data policy for the AFRICOVER data is decided upon.

## **10. INFORMATION ON AFRICOVER DATA SETS**

### **10.1 Actual presentation**

The project gave a presentation on outreach activities being developed that are planned to be released soon. The NCM was requested to give recommendations on the different items presented both in content and presentation.

- (a) A proposal for a WEB-page was presented to the NCM. The tentative layout showed the different possibilities of how the individual countries, the AFRICOVER initiative and the Eastern African module can exchange up to date information and expose the most recent developments to an international audience. The general presentation of the AFRICOVER initiative, the exposition of the specific applications developed by the Eastern Africa module, and the exhibition of the members of the NCM has the potential to assist in a global interest for further developments, and applications based on the AFRICOVER methodology. A special section of the WEB page will be reserved as a discussion forum for the members of the NCM.
- (b) An example of a tentative brochure presenting the Africover methodology of MADE was presented to the NCM. The brochure should assist the NFPI's and other members of the NWG's to demonstrate the potentiality of the resulting databases for various applications to decision-makers and potential donors.

### **10.2 Remarks/Recommendations/Observations**

After the general presentation of these outreach activities the following specific questions and the following remarks/recommendations were issued:

- (a) On the inquiry of the NCM concerning the timeframe that is needed to further develop the WEB-page the project stated that it should be operational from May 1999.
- (b) The NCM agreed on the printing of the presented brochure in both English and French.

- (c) A suggestion was made to organize an international event/seminar complementary to the regional and national workshops for decision-makers. This international event could give the Africover Eastern Africa project a forum to expose the current data production achievements and realized or potential applications to an international audience including the current and future donors. Such an event could take place in Italy, hosted by a qualified Italian institution. The event could also provide further evidence in support of a project extension.
- (d) On finalization of the national databases the project proposed to organize additional presentations per country to introduce the availability of the national database. The demonstration of the possibilities of the use of the data, the exhibition of readily available or future applications will be exposed to a large audience of possible national and international users. This event will equally give the opportunity to the NFPI to emphasize their position as focal point for the management of the national databases.

## **11. FUTURE INITIATIVES FOR THE DEVELOPMENT OF AFRICOVER DATABASES AND RELEVANT APPLICATIONS (POSSIBLE FUTURE DEVELOPMENTS BEYOND THE PRESENT PHASE)**

### **11.1 Actual presentation**

The CTA of the Africover Eastern Africa project presented the following topics:

#### **(a) Strengthening national capacities, institutions and communities of potential users**

At the national level the project sees the need for a further tuning of the database. In selected areas, a larger scale of mapping can be initiated according to national priorities. The NFPI could be supported in strengthening the relations with potential users and in the development of applications at national level.

#### **(b) Strengthening regional capacities, institutions and communities of potential users**

At regional level the project could play an important role as facilitator to initiate or support the development of applications aimed to solve regional constraints with particular attention given to Forest resource assessment, flooding risk assessment, support of specific need of the 3 conventions on climate change, biodiversity and desertification and hydrological models and applications for the Nile Basin and lake Victoria Management.

#### **(c) Selected Global Applications**

The project could further support the development of new methodologies for the assessment and monitoring of Land Cover Change through the use of new low resolution satellite imagery: in combination with the Africover database this will assure a high cost effectiveness of the acquired data and prove to be very user-friendly. The project will further develop and upgrade the different softwares.

The full presentation is included in Annex III.

## **11.2 Remarks/Recommendations/Observations**

Following the presentation given by the CTA and the following discussions by the NCM the members took note of the proposal forwarded by the CTA, indicating the relevant importance of the presented future developments:

The present project implementation phase provides for an important basis for further developments based on the produced homogenized land cover and environmental information. During the current phase parallel activities were initiated showing the important value of the use of the data in various applications. The further development of different applications and modules beyond the current project implementation phase would prove to deliver a very important and efficient validation of the acquired data.

## **12. OTHER TOPICS**

A proposal was made to institutionalise the NCM, which then could function as a steering mechanism for the project.

## **13. RECOMMENDATIONS**

- (a) The NCM agreed on a proposal to institutionalize the NCM as a steering committee for the project.
- (b) Recommendation was made by the NCM to FAO and the donor, to make all possible effort to extend the project activities to the end of the year 2000. Therefore the Italian Government was recommended to make additional funding available to assure the realization of the project's main objectives. In addition, the NCM requested the donor to consider possible future activities beyond the present project implementation phase.
- (c) The project management was requested to deliver a detailed workplan and annotated budget by the end of March 1999.
- (d) The NCM requested the project to provide to all its members quarterly reports to monitor the projects progress.
- (e) The NCM agreed that the NFPI has the ownership of the national data and that all use of the data on national purposes will be monitored by the NFPI.
- (f) The NCM agreed that FAO can make unlimited use of the full database for FAO related purposes and that the Italian Government is allowed full access to the data.
- (g) The NCM agreed on the organization of the following events :
  - an international event/seminar to expose the current data production achievements and realized or potential applications to an international audience including the current and future donors. It was noted that such an event could take place in Italy, hosted by a qualified Italian institution.
  - a regional workshop for decision-makers.

- a national workshop for decision-makers.
- This international event could give the Africover Eastern Africa project a forum. The event could also prove to justify additional budget for the current and coming phases.
- presentations per country to introduce the availability of the national database.

#### **14. DATE AND VENUE OF THE NEXT MEETING**

- (a) A proposal was made to hold the meeting in Arusha, Tanzania or in Kampala, Uganda. The project management is requested to decide at the appropriate time
- (b) It was proposed to hold the meeting around mid November 1999. In the case of a project extension a preferred date for the meeting would be in January 2000.

**After discussion, the NCM adopted the minutes.**

#### **LIST OF ABBREVIATIONS USED**

ADG	Africover Database Gateway
AID	Africover Interactive Database for photointerpretation
AIMS	Africover Interpretation and Mapping System
CTA	Chief Technical Adviser
DTED	Digital Terrain Elevation Data
EOSAT	Earth Observation Satellite Company
FAO	Food and Agriculture Organization of the United Nations
GIS	Geographical Information Systems
GPS	Global Positioning System
IFAC	International Federation of Automatic Control
LCCS	Land Cover Classification System
MADE	Multipurpose Africover Database for Environmental resources
NASA	National Aeronautics and Space Administration
NC	National Co-ordinator
NCM	National Co-ordinators Meeting
NFPI	National Focal Point Institute
NIMA	National Imagery and Mapping Agency
NWG	National Working Group
RCSSMRS	Regional Center for Services in Surveying Mapping and Remote Sensing
SDRN	Environment and Natural Resources Service
UTM	Universal Transverse Mercator
WGS84	World Geodetic System 1984