



FUTURIS XXII "CARBOAFRICA"

SHOOTING: Near Viterbo (Italy) and around Pointe Noire (Congo-Brazaville).

..... PICTURES IN 16/9.....

ENGLISH SCRIPT

1.00

1.11

Joseph Levillain and Jean-Claude Mazoumbou are regular visitors to this eucalyptus plantation near Pointe Noire, the economical capital of the Republic of the Congo, in central Africa.

Of interest to them are the trees' wood and foliage. Researchers measure and weigh the leaves, both growing and fallen.

They want to know how many nutrients and how much CO₂ these trees can absorb at different stages of their lives.

1. 43 ITW JOSEPH LEVILLAIN GEOLOGIST

"Eucalyptus is a plant that grows very quickly, so it traps carbon quickly...(graphic)..The plant will feed off atmospheric CO₂. Once the carbon is inside the trunk, some of it is fixed in the wood. The plant also transfers it into the ground, the bark, the branches and the leaves. These will decompose to form an organic matter that's pretty much carbonised, with Nitrogen and other mineral elements."

2.20

What the researchers have to do is measure carbon levels in the trees' roots and surrounding soil.

2.33



Several holes are dug six metres deep to recover underground water at different depths. The samples are dispatched to a laboratory to help answer various questions.

2.48 ITW JEAN-CLAUDE MAZOUNBOU, NUTRIENT RESEARCH TECHNICIAN, UR2PI

"Is it carbon that's existed here for centuries or has it only been here since Man's arrival? Lots of burning goes on in the area, and then on top of that there's been lots of building here. Did Man bring the carbon with him?"

3.04

Unindustrialised and scarcely populated but for a small urbanised corner of the country, 60 percent of the Republic of the Congo is forest. It is therefore not a heavy polluter.

The carbon cycle here remains a mystery, as it does in most of sub-saharan Africa. No-one quite knows how much CO₂ or other greenhouse gases the continent produces, or how much is absorbed by its range of ecosystems.

An EU research project named CarboAfrica intends to shed some light on the issue.

European and African teams are working together for a deeper understanding of the carbon cycle and its evolution.

Their efforts should help locals work the land more efficiently.

3.45

For example Congolese charcoal-makers have been burning tropical species of trees for their charcoal for centuries. That means more CO₂ in the atmosphere, and fewer trees to absorb it.

Now the charcoal burners are being urged to use wood from artificial plantations grown on previously unexploitable savanna.

4.07

With its savanna, tropical forest, plantations and deserts, Africa's diverse ecosystems have forced scientists to vary their techniques.

Agnès de Grandcourt and Antoine Kinana run this small station in the savanna.

Every week they come to check the carbon levels and other useful meteorological data.

Bar two cities and a few small towns, savanna covers most parts of the country that is not forest.

4.36 ITW AGNÈS DE GRANDCOURT, ECOPHYSIOLOGIST, CIRAD-UR2PI (IN FRENCH)



"We're interested in the savanna because it's very barren. We want to know how carbon is absorbed in such conditions, where plants find it hard to grow. In durable development projects, like the one here in Congo, the eucalyptuses are not only planted on this type of savanna.

"We need therefore to be able to compare what happens before planting to what happens after. It's this difference that interests us: the quantity of carbon that becomes fixed once the eucalyptuses have been planted."

5.15

Antoine is using this device to measure soil humidity. The results will help researchers chart CO2 absorption in diverse weather conditions, like dry or rainy seasons.

5.29 ITW ANTOINE KINANA, CARBON RESEARCH TECHNICIAN, UR2PI (In french)

"It's useful to know the ground humidity because that's what allows the ecosystem to grow. Grass needs this moisture. The more a plant grows the more foliage it gets and the higher the rate of photosynthesis becomes."

5.51

Nine thousand kilometres from the Congolese savanna, in this Mediterranean oak forest, the CarboAfrica project is coordinated by Italian researchers from the University of Tuscia.

Data taken in Africa is analysed and compared to results collected in these 65-metre towers, which measure carbon flux above the forest.

The towers came into use two decades ago and are now key tools in the so-called Global Earth Observation System of Systems, or GEOSS.

6.26 ITW RICCARDO VALENTINI, CARBOAFRICA COORDINATOR (IN ITALIAN)

"This monitoring network gives us a global picture of Greenhouse emissions. We have almost 400 of these towers worldwide all monitoring emissions and absorption of gases 24 hours a day. Here in Europe we receive the data and analyse it; we are the world's leaders in this field.

African monitoring networks will provide a unique opportunity. We can relate this field data with that taken by satellite in order to estimate the flux of greenhouse gases more accurately, both locally and globally. This is one of Europe's contributions to this Global Earth Observation system".

7.04

Researchers calculate the green surface of this forest by measuring the solar radiation filtered by the leaves.

The data helps predict how- and to what extent- healthy ecosystems can absorb greenhouse emissions. And tropical deforestation is a major factor in emissions.

7.24 ITW RICCARDO VALENTINI, CARBOAFRICA COORDINATOR (IN ITALIAN).



"Tropical deforestation has a critical role in stabilising the global climate. Today around 2 billion tons of CO2 are sent into the atmosphere because of tropical deforestation, including burning and legal and illegal cutting. This represents around 30 percent of the world's fossil emissions. It's a key issue now that the whole world is thinking about how to curb emissions. More has to be done to reduce this deforestation as much as possible".

7.56

Back in the Congo that's precisely the aim of a team led by Rosalie Matondo, an engineer in agronomy and head of the National Reforestation Centre.

8.07

The team has planted several hundred Bilinga and Okoumé trees, two species typical of primary tropical forests. The objective: guarantee biodiversity and improve the economical value of the forest, while at the same time increasing carbon absorption.

8.30 ITW ROSALIE MATONDO, DIRECTOR, NATIONAL REFORESTATION SERVICE (IN FRENCH).

"The problem with dense forests is that we don't know the carbon fixation level of the species. Studies haven't yet been carried out. But what we do know is that slow-growing species retain carbon for longer compared to species that we have to cut down every four to five years. These species are cut every 50 to 100 years."

8.54

CarboAfrica workers know that more research is needed if we're to fully understand the complex carbon cycle of Africa's rich but endangered ecosystems.

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9.10