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Land Tenure and Property Rights Issues in Natural Resource Management and Biodiversity Conservation

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Property Rights and Resource Governance Issues and Best Practices

Washington, DC

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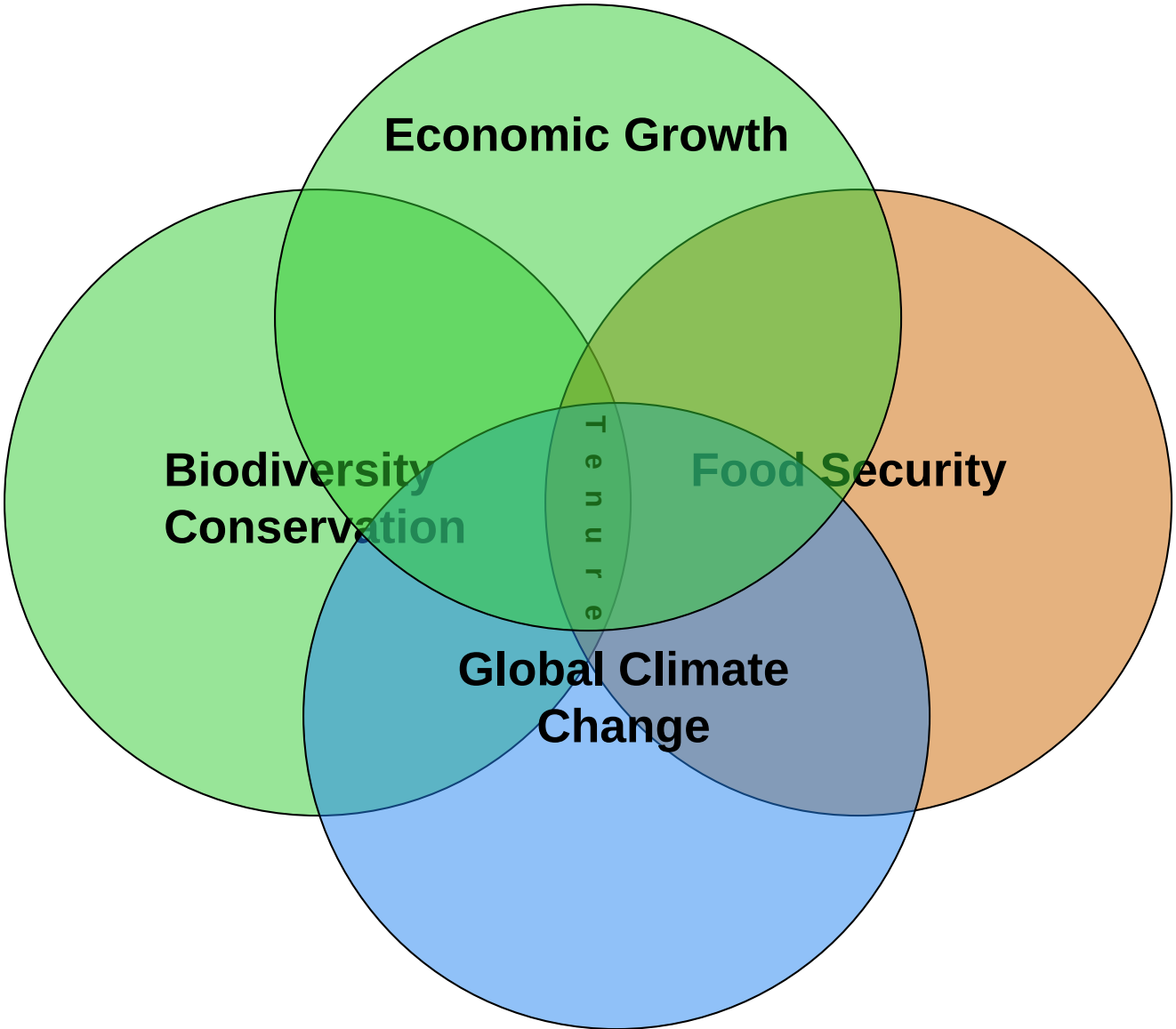
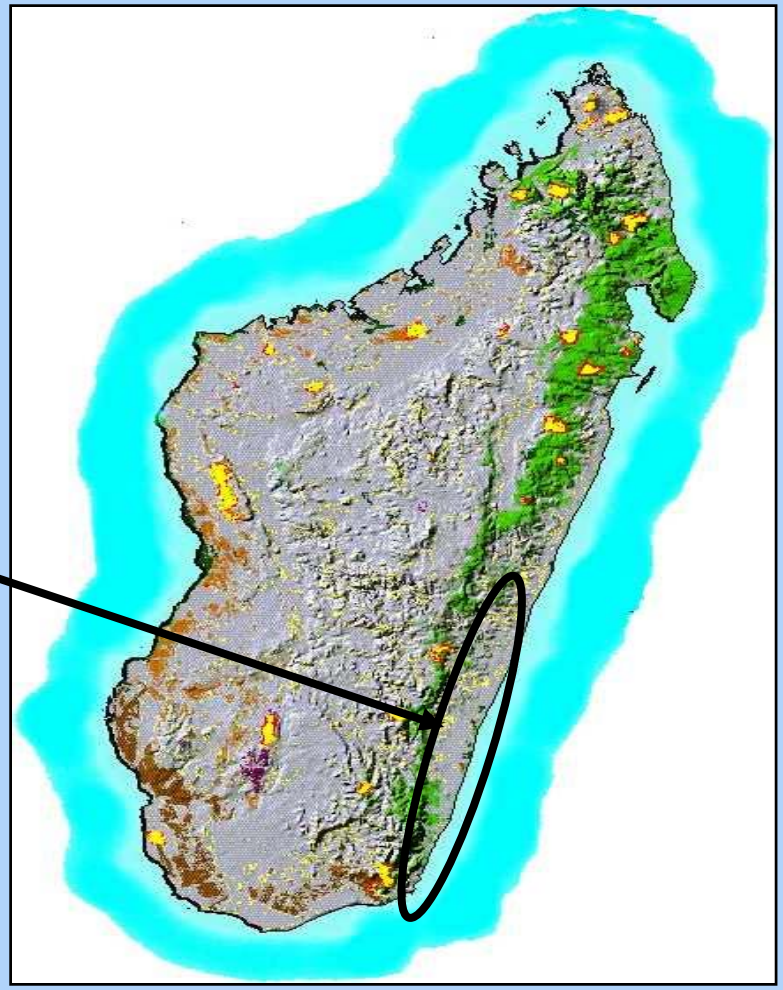
Policy Imperatives between Biodiversity Conservation, Global Climate Change, and Food Security – Addressing the Resource Tenure and Property Rights Interface

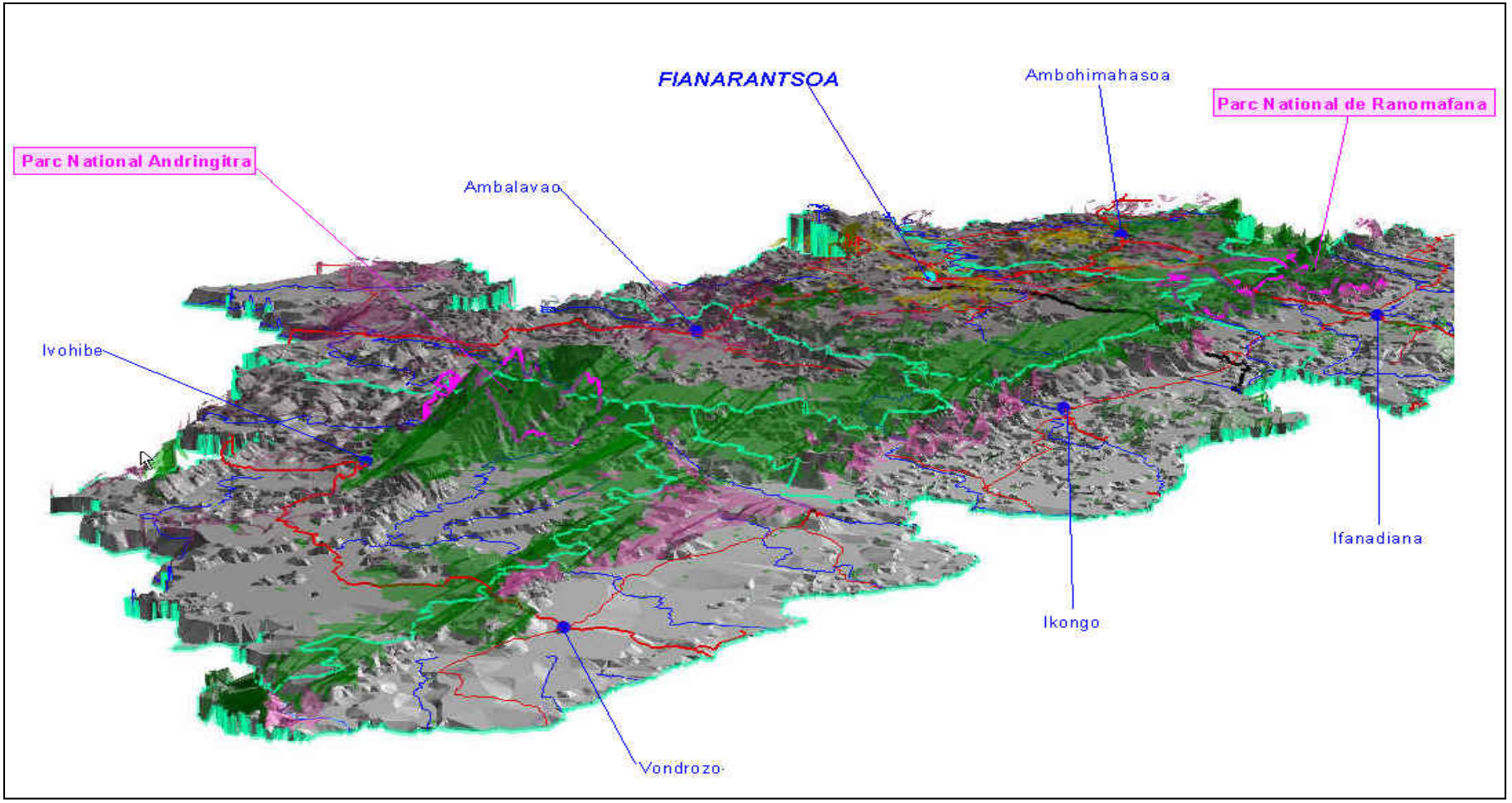


Observing Tenure Issues in the Field: An Overflight and Hike along the Fandriana – Vondrozo Forest Corridor of Madagascar

Fandriana – Vondrozo Forest Corridor



The Fianarantsoa Madagascar Forest Corridor



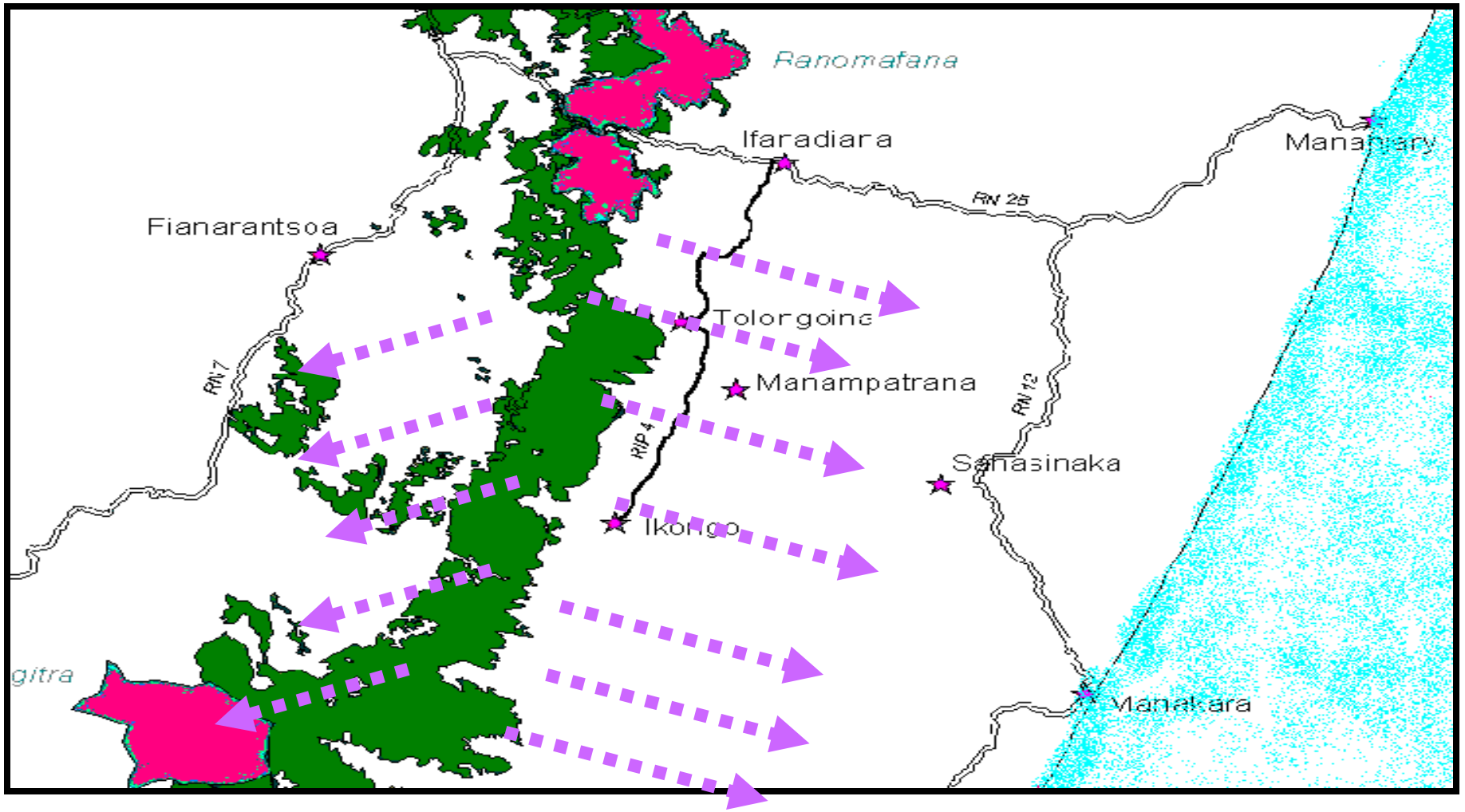
The Fianarantsoa Forest Corridor Overflight

The forest corridor is the last vestige of a vast forest that at one time covered a large part of eastern Madagascar. It is now reduced to a narrow band 200 km long and 5-20 km wide. This forest corridor plays a vital part of the ecology and economy of the south eastern part of the country.

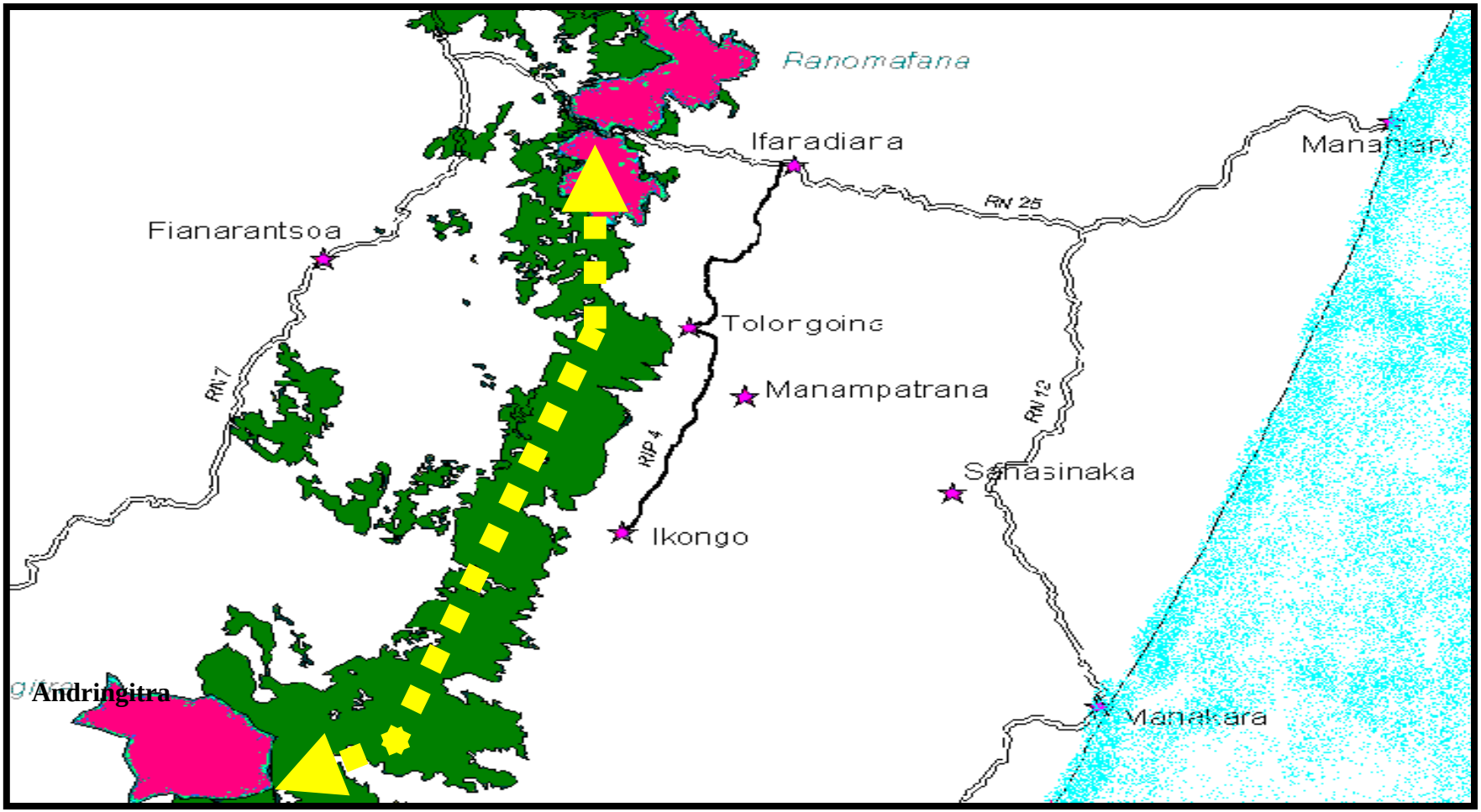
In the past this forest probably covered a large part of Madagascar and the province of Fianarantsoa…

… but today it is reduced to a small band 5- 20 km wide along an escarpment bordering high and low altitude gradients.

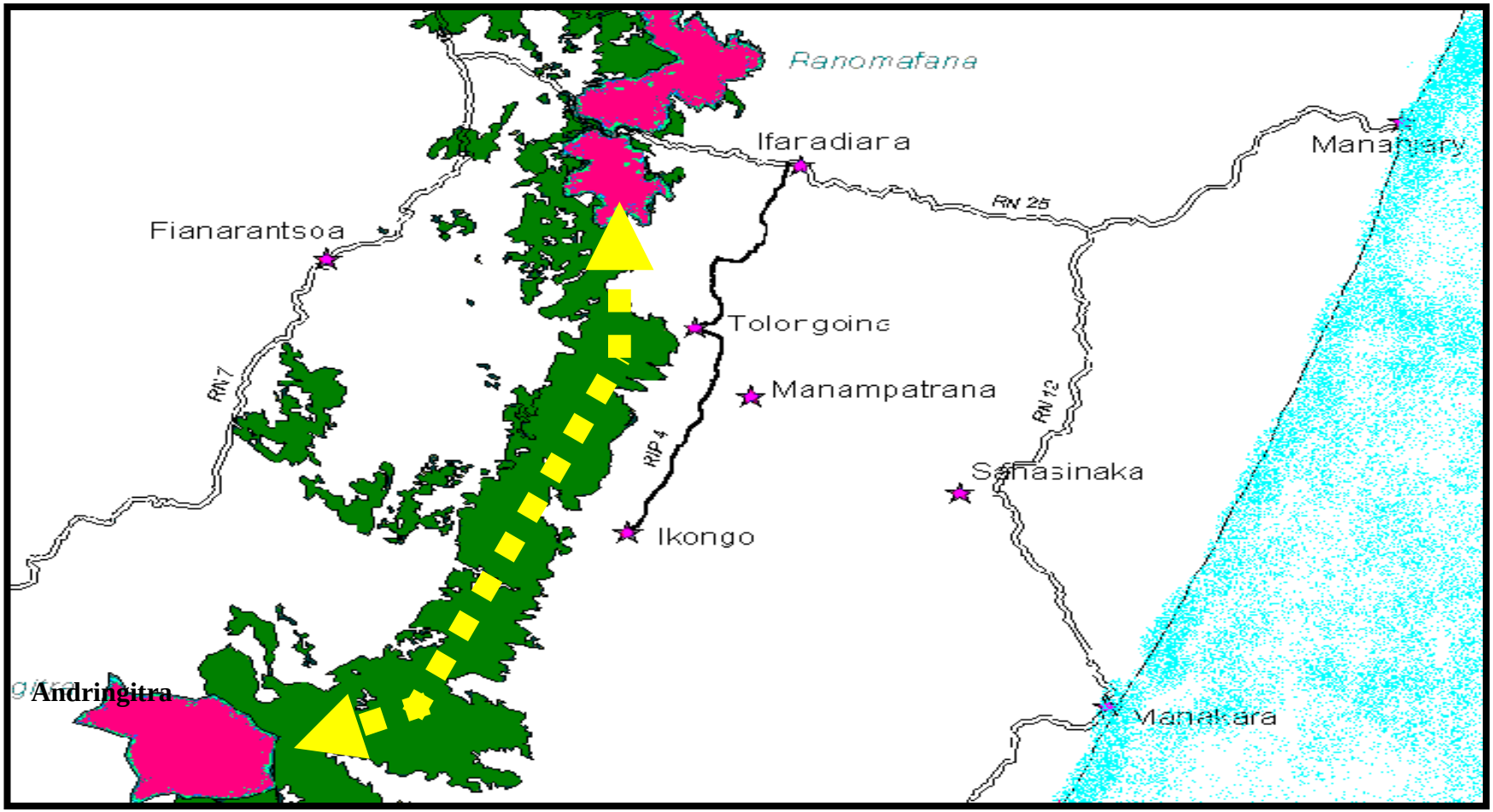
The forest corridor is the «water tower» of the province – a source of water for irrigated rice cultivation, urban water supplies, and hydroelectric power.



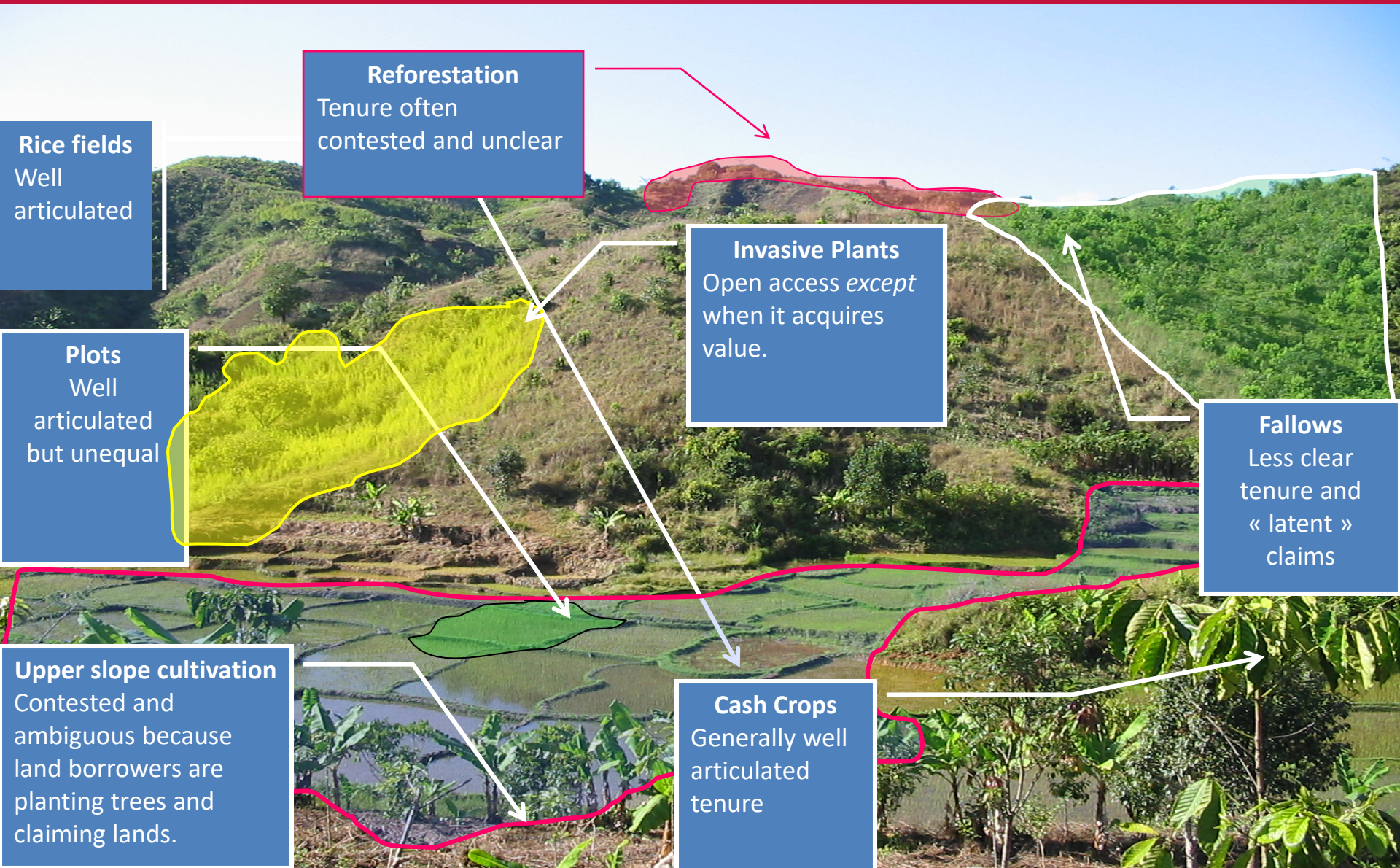
The forest corridor is a biological corridor that contributes to the maintenance of biodiversity between two national parks but that also contributes to ancillary economic activities.



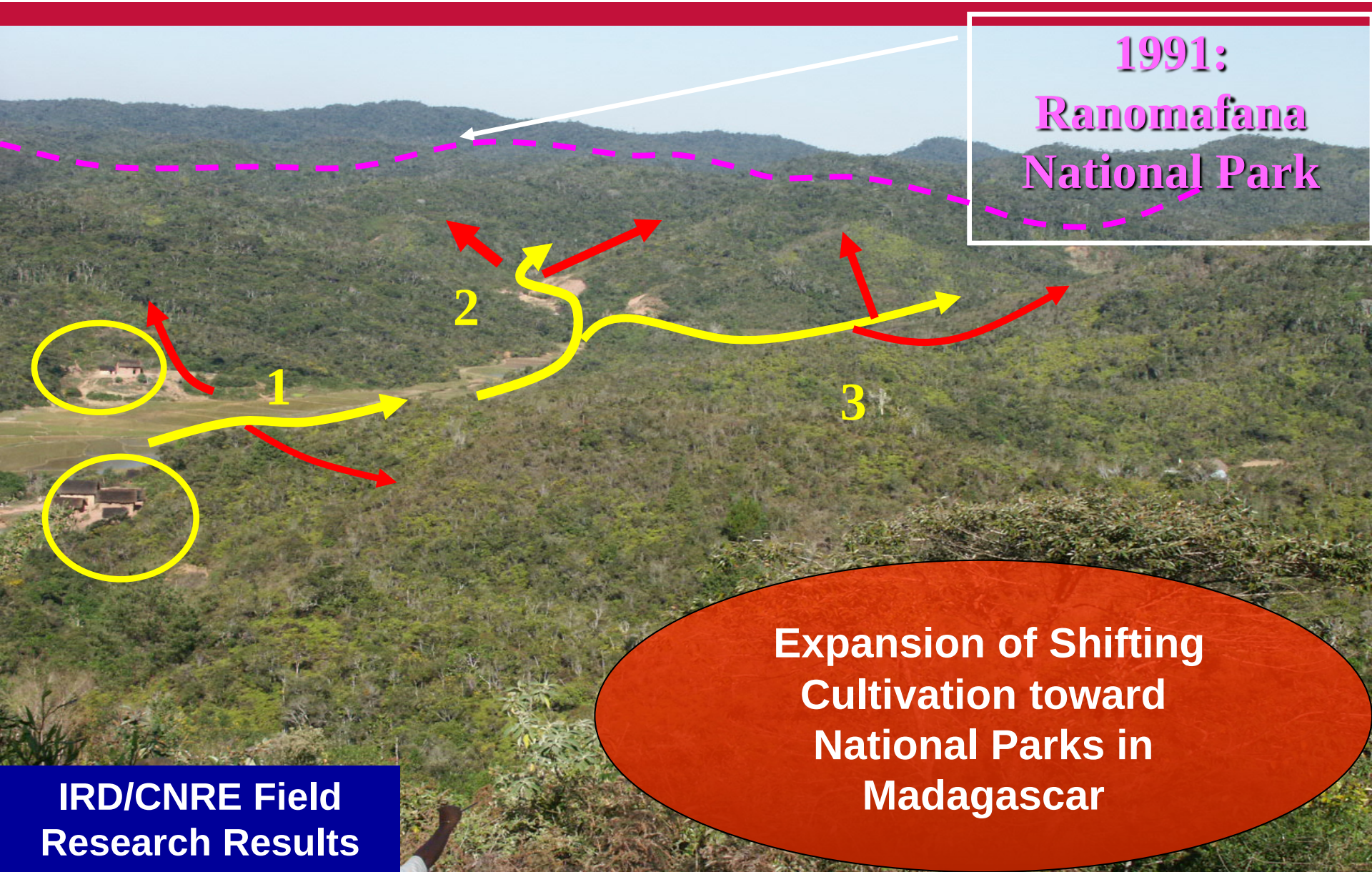
The forest corridor is a source of economic value – ecotourism, secondary forest products, hydroelectric power, mineral resources, bioprospecting, ecoagriculture, zone carbon sink and source of payments for avoided deforestation…



Ecological Niches = Tenure Niches



Causes of Forest Conversion



Overlapping tenure regimes

The corridor is a classic example of an area that is governed by multiple tenure regimes:

Statutory tenure rules: the forest belongs to the State, which allocates use rights (mining, logging, etc).

Customary tenure rules: the forest belongs to the clans or villages that initially delimited their boundaries.

- agricultural production
- forest reserved as the "community land bank" with the idea that future generations will need to expand their agricultural holdings
- Differential rights between men and women
- In the meantime, local people harvest natural resources (medicinal plants, poles, firewood, etc.)

Photos: Tetra Tech

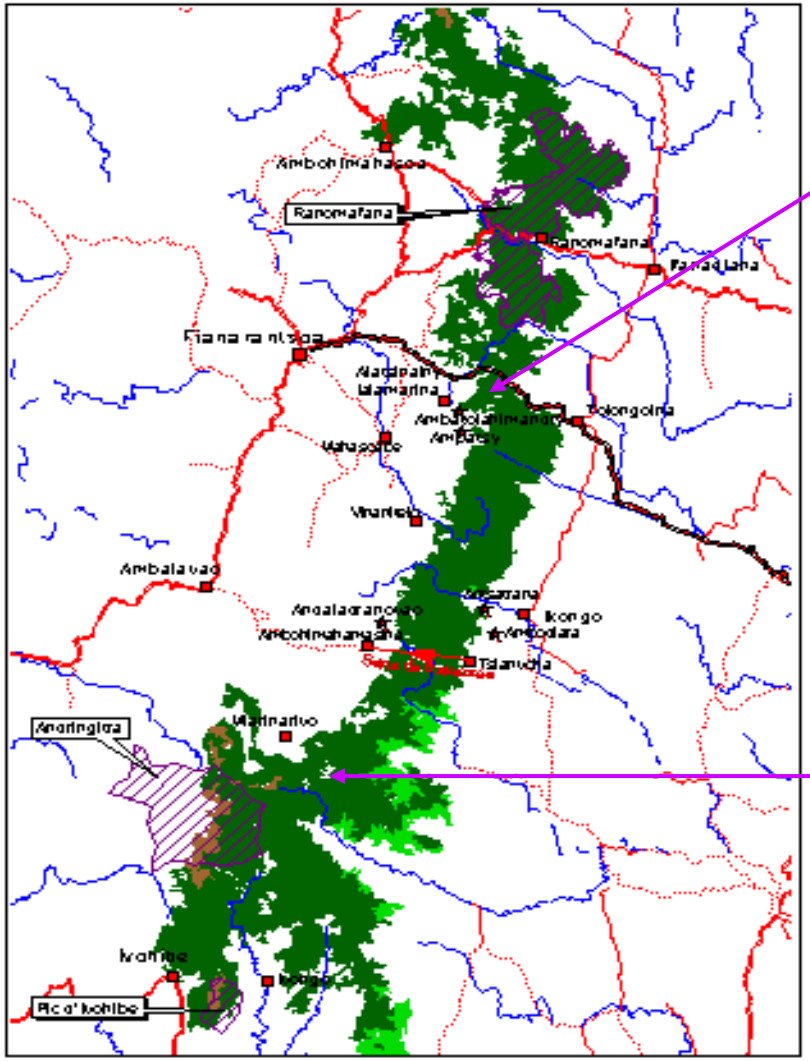
General Tenure Dynamics of the Forest Corridor

Territories formerly collectively managed; now free-for-all.

Individual property rights emerge leading to increased land Fragmentation.

State lacks political will and institutional means and capacity to manage vast and remote landscapes.

Contested Rights: Small-Scale Artisanal Mining



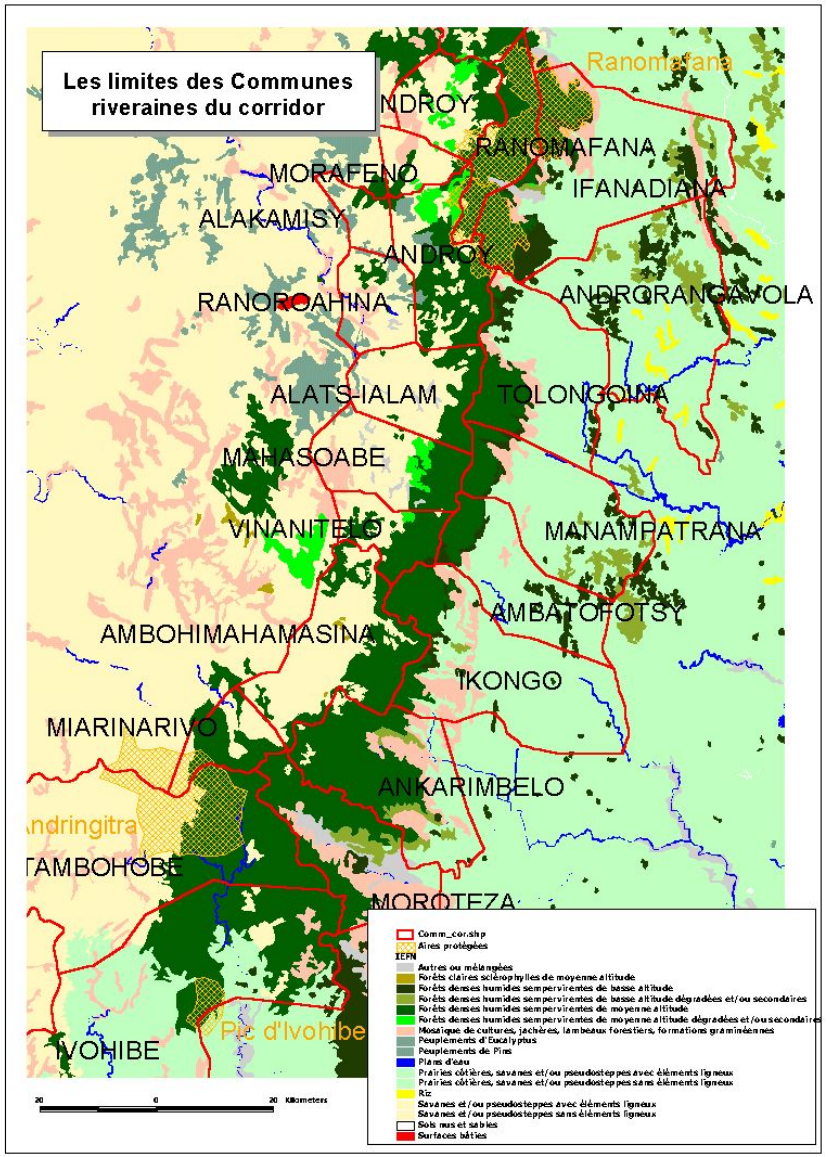
The forest corridor is well known for the presence of gold, quartz, corundum, emeralds, and other semi-precious stones. Ecological impacts of mining are scattered throughout these forests.

Corandum Mining in The Forest Corridor

Corundum (family of sapphires and rubies)

- **Very hard aluminum oxide mineral**
- **Used for sharpening stones, sand paper, and other industrial purposes**
- **Strong market attractive to artisanal miners**

Landscape Conservation Challenges: Building Tenure Security in the Forest Corridor



Building Political Will in Fragile States

Creating Co-Management Regimes out of de Facto Open Access

Constructing New Institutions for Large-Scale Ecoregional Conservation

Co-management strategy

Faced with evidence of massive pressures on the corridor, USAID's strategy was to engage the government and local communities in a strategy to "co-manage" the corridor.

The community agrees to :

cease unsustainable exploitation of forest resources (no new slash and burn agriculture)

and

protect / monitor the health of the corridor.

The GoM/Eaux et Forêts cede certain management rights to local communities who are allowed to :

exclude outsiders

Sustainably harvest forest products (in some areas)

Financially gain from the forest (e.g. eco-tourism ventures).

The arrangement is validated by a co-management contract.

Contested rights

In fact, this pleasantly simplistic dichotomy of interests (state/community), belies a far more complex stakeholder reality in which the corridor is a place of contestation over by various interest groups

	Land	Trees	Subsoil minerals	Water	Forest products
National authorities (Mining vs Forestry/Water ministries)					
Local authorities					
Local community (rich vs poor, landed vs newcomer)					
Projects/donors					
Miners (large scale vs artisanal)					
Loggers (large scale vs artisanal)					

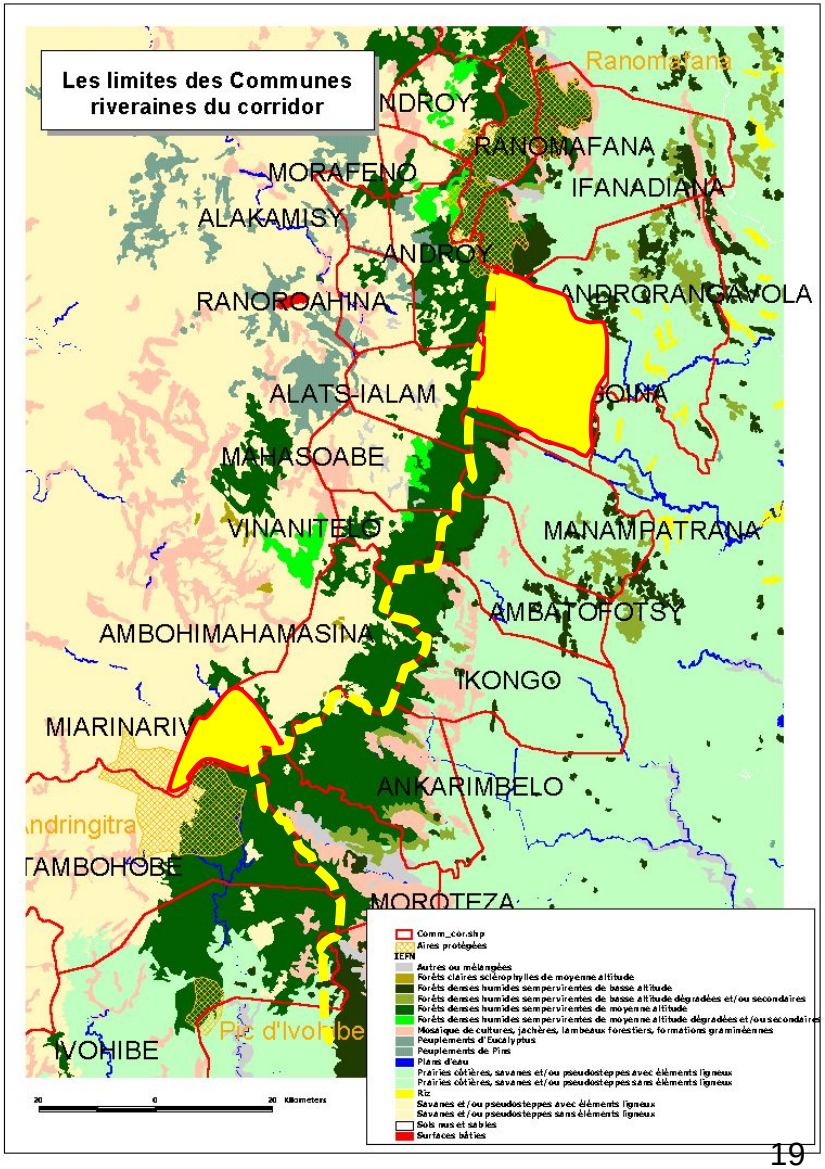
Results: Co-Management Interventions Leading to Biodiversity Conservation

USAID and other conservation projects had invested in the Fianarantsoa forest corridor for over 10 years.

Ecoregional approach had led to:

Co-management (COBA) committees in many communities along the corridor: delimited community boundaries and established resource management contracts.

Small-scale development interventions implemented (improved water catchment, promotion of agricultural diversification, implemented a small credit scheme, opened an agricultural supply center).



Undermining Conservation and Development Interventions: Shocks of Climate Change

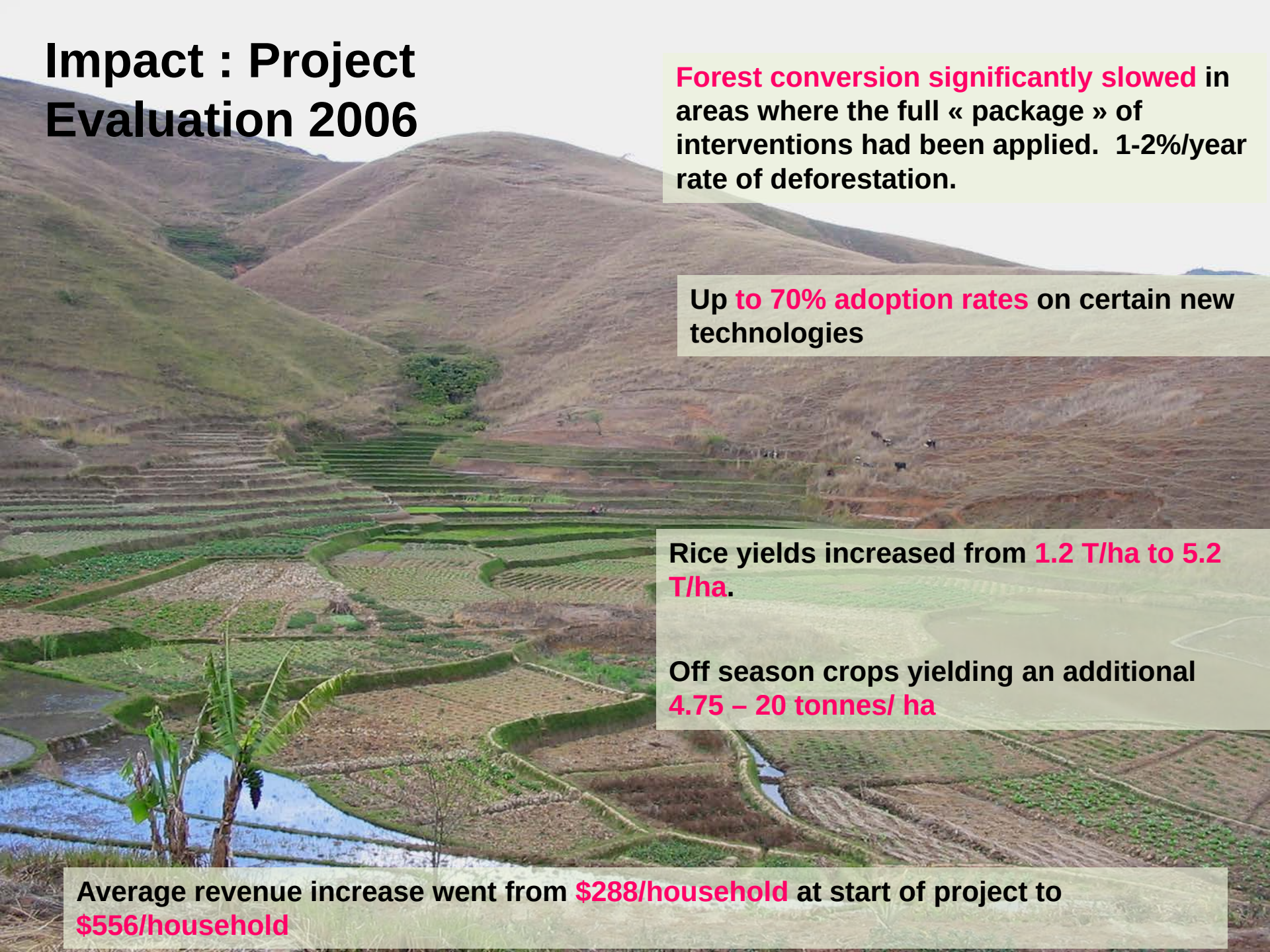
Adaptation Issues

- Changing temperature Gradients with unknown ecological consequences
- Expansion of vectors for diseases (malaria, plague…)
- Changing seasonality and impacts on rain fed agriculture
- New drivers for agricultural expansion into forest corridor

Mitigation Issues

- Building climate resiliency into farming systems
- Building climate resiliency into Infrastructure projects
- Constructing new institutional arrangements for payments for ecosystem services

Impact : Project Evaluation 2006



Forest conversion significantly slowed in areas where the full « package » of interventions had been applied. 1-2%/year rate of deforestation.

Up **to 70% adoption rates** on certain new technologies

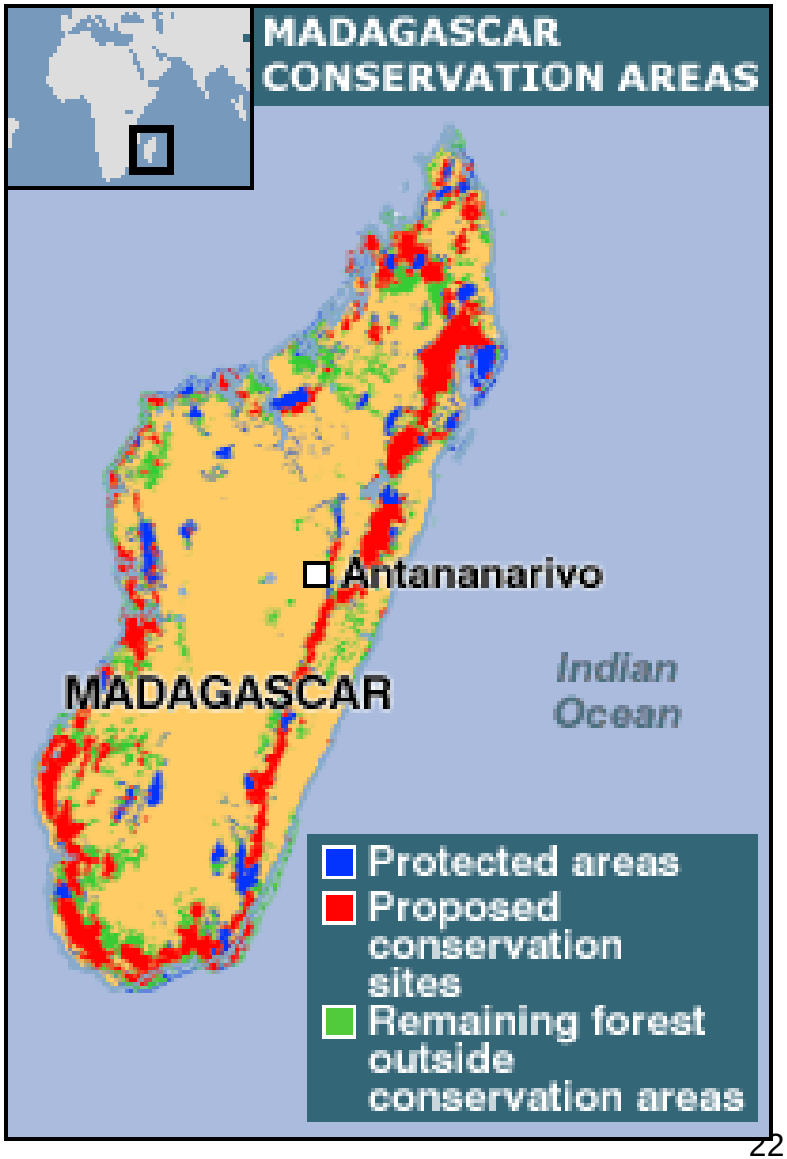
Rice yields increased from **1.2 T/ha to 5.2 T/ha**.

Off season crops yielding an additional **4.75 – 20 tonnes/ ha**

Average revenue increase went from **$288/household** at start of project to **$556/household**

But, good intentions turn sour…

In September 2003, President Ravalomanana surprises the world and shocks many in Madagascar by announcing, at the World Parks Congress (Durban, South Africa) that he will put **6.2 million additional hectares of forest under protected area status**.



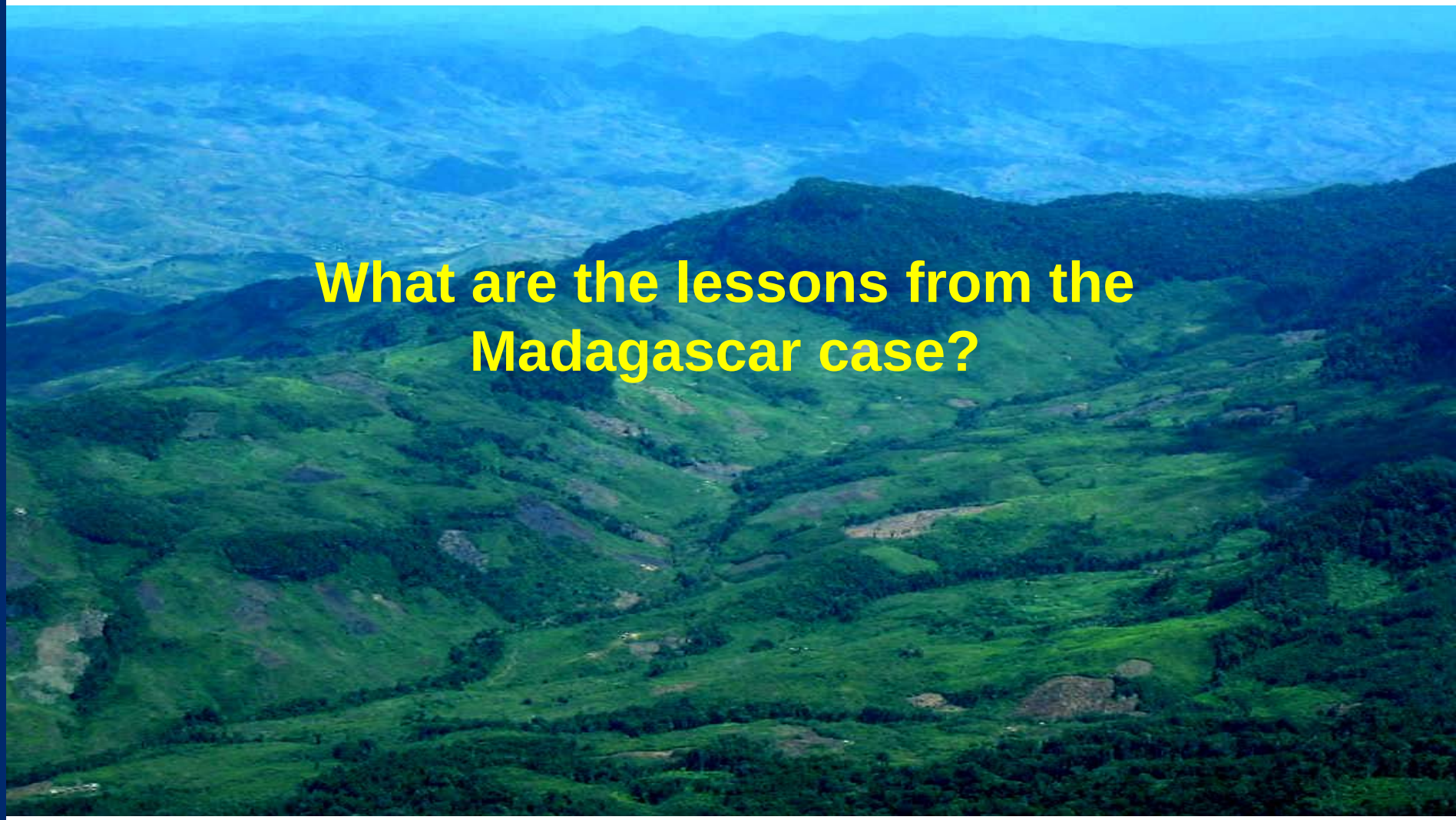
The Rush for the Forest Corridor…

Confusion and concern: In local communities, many fear that the corridor will become a new national park and they will lose their rights.

Rush to occupy the corridor: Small farmers move into the corridor "before the government gets it all" to clear fields and establish land rights and miners seek to establish claims while permits are still available.

Within a year, "exploratory" mining permits cover vast areas of the corridor. Co-management is in doubt!

The Outcome of Human Pressures on the Forest Corridor



Biodiversity Conservation, Food Security, and Climate Change: Contested Spaces, Contested Resources

The Ranomafana – Andringitra forest corridor is a contested space. The future of the forest corridor will be shaped by global and national policy decisions around the crises of conservation priorities, food security, economic growth, and now, global climate change. Biodiversity conservation, economic growth, and food security are compatible goals within the complexities of unfolding climate change realities. But, good governance key to building tenure security, a building block for the future of the corridor.

The Key Question

Does Tenure Security lead to Biodiversity Conservation?

It Depends!