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Journey to Australia

12 – 20 February 2010

**Subject of the trip: Land-use strategies
to combat climate change and weather extremes**

How are farmers, forest rangers and conservationists in Australia dealing with ever more extreme weather events? How are they trying to promote carbon storage in soils? What are they doing to preserve moisture? What can be done to protect the habitats of indigenous plants and wildlife? How can the erosion of fertile soil by water and wind be avoided? In summary, what is being done to ensure sustainable land use and prevent climate change in Australia?

Weather extremes are much more severe in Australia than in central Europe. Droughts that can last years alternate with heavy flooding. According to climate forecasts, the southern part of the continent will continue to become drier while the northern half will become ever wetter. On the first day of my visit to Queensland, so much rain fell on the coastal plain that cars were washed off the roads and piled on top of each other. Two days later, rivers in the region were flowing sluggishly again. But appearances are deceiving: Sudden downpours can cause their waters to rise to 30 times the normal level.

In Melbourne I met Sue Marriott und Rob Youl, two pioneers of the Australian Landcare movement. They accompanied me on my trip along Australia's southern coast.

Westgate Park in Melbourne

Located on the outskirts of Melbourne, Westgate Park extends over 60 hectares. In fifteen years of hard work and with the help of public funding, volunteers from a local conservation group have transformed what was once an industrial wasteland into a green oasis with small lakes, groves of trees and scenic views. They grow the plants from seeds they collect from indigenous trees. I'm surprised at the wide range of birds in the park; they don't seem to mind the roar of traffic from the nearby motorway.

The volunteers think of themselves last. Their lodgings are reminiscent of a homeless shelter. On my tour through Westgate Park I get the first answers to some of my questions – active **carbon sequestration** achieved by means of **stable vegetation cover, biological diversity** by transforming a once barren industrial landscape into an attractive habitat and **storage of rainwater** as the key to successful water management.



Melbourne is an intriguing mix of colonial architecture and modern skyscrapers. Not least because of its many green spaces and parks, quality of life in the city is among the highest in the world.



The plants in Melbourne's Westgate Park are grown from indigenous seeds.

Farmers shape the landscape

Yanyangurt Farm is located in the community of Deans Marsh, 150 kilometres southwest of Melbourne. On the farm, we are greeted by its owner, Andrew Stewart – and by a baby kangaroo. When its mother was run over by a car, Stewart's wife rescued the orphan from her pouch and raised it by hand.



Members of the Otway Agroforestry Network in Deans Marsh, Victoria. Their work has increased biodiversity in the region as well as enhanced the value of their farms. At the far right, Andrew Stewart's wife with the family's pet kangaroo.

About a dozen farmers have gathered today to present their project to me, the guest from Germany. They began actively transforming their barren land in 1996, planting native species of shrubs and trees along the edges of streams and paddocks. A full 25 farms with a total area of around 15,000 hectares are now participating in their **Agroforestry Network**. The way these farmers see it, nature conservation and agricultural production need not be mutually exclusive. I spot a poster proclaiming: **Farmers making trees work for them!** As Andrew Stewart puts it, "If we can get more carbon into the soil, that also helps retain more moisture." By working to ensure continuous vegetation cover year-round and thus protecting the soil from erosion, the Agroforestry Network not only helps create better grazing conditions for livestock, it also helps increase biodiversity. When we take a tour around the paddocks in an all-terrain vehicle, I hear impressive proof of this last point in the melodious songs of myriads of birds all around us. It's a hot day, and when we step into a lowland eucalyptus forest, the cool shade is very welcome. Thanks to the Agroforestry Network's efforts, the share of planted areas here has grown from six percent in 1996 to 20 percent. These plantings do more than provide shade, they are a boon in other ways as well. The farmers tell me what's important to them about the project: It's not just about owning land or trees, it's about being able to decide what gets done and how. One of them says the local bank recently appraised the **property value of his land higher** than back in the days when the hills were barren. With their project,

these Australian farmers are not only practicing exemplary landscape preservation, they have managed to increase the value of their land, ensure its sustainable use, and **save** on the **cost** of running their farms at the same time – an impressive feat indeed.



Farmer Richard Gilbert has reforested part of his land and now practices "agroforestry".



The portion of planted areas has risen from six to 20 percent, increasing the land's ecological value – and its property value as well.

It's here that I encounter the term **catchment** area for the first time. While the word is generally a synonym for drainage basin, these farmers use to mean an area that absorbs water that contributes to a region's groundwater supply. The retention of rainwater is of fundamental importance in arid Australia. Thus the Agroforestry Network takes care to lay out plantings so as to help retain water, using minor topographical modifications to create a decentralized network of **water reservoirs**.



Extensive planting in this lowland near Phillip Island helps reduce soil salinity.

The people here are reserved, but their pride and satisfaction in what they have achieved shines through nevertheless. But it's more than just that. One person I talk to casually lets the term "ecological aesthetics" drop and speaks of a growing sense of belonging to the land. These words remind me of the Aborigines' way of seeing things: Rather than believing the land belongs to them, they see themselves as belonging to the land. Certainly, when actively pursued, this more profound way of making the land their own – with their hearts, rather than merely taking possession of it – would be a blessing for the land, the culture of its indigenous

inhabitants and those who now cultivate it. The approach shines new light on the broad concept of **sustainability** and brings it together in a nutshell as long-term economic value, a liveable environment for our fellow creatures, deriving pleasure from beautiful surroundings and strengthening the community.

But good things often need a little help to get started, even in Australia: The initial investment required to establish plantings and water reservoirs is too high to be financed solely from a farm's operating income, so projects of this kind are impossible without public start-up funding – and without the hard work of dedicated people all over the country.

Landcare Australia

When European settlers began occupying Australia in 1788, they proceeded to clear vast sections of the land's original vegetation. Over the next 100 years this led to



Sue Marriot

massive soil erosion and a severe decline in biodiversity, with many plant and animal species becoming extinct altogether. This in turn paved the way for the unchecked spread of weeds and pests and increasing salinity, which resulted in a decline in water quality. In the years between 1945 and 1985 it gradually became clear that farmers needed to work together more closely if they were going to take effective action against this ecological crisis. However, despite the investment of enormous amounts of time and effort, such projects did not meet with widespread public support. The Australian government responded by launching a soil conservation programme in 1983. Then in the mid-1980s, two women put their heads together to come up with a comprehensive approach to



Australian forest ranger Rob Youl (front) talking with German forest ranger Josef Göppel.

address the problem in Australia's southeastern state of Victoria: Joan Kirner, who was then Minister for Conservation, Forests and Lands, and Heather Mitchell, the president of the Victorian Farmers Federation. In **1986** the state of Victoria initiated a programme to cover the wide range of technical and social aspects involved in the exploitation of natural resources. The programme was dubbed **Landcare**, and the first Landcare group, which is still active today, was founded in Winjallock near St Arnaud on 25 November 1986. Uniting landowners and the efforts of dedicated volunteers,

Landcare soon proved itself effective in practice.

On a national level as well, decision makers in farmers' associations and in the Australian Conservation Foundation soon realized that unless the long-standing tensions between conservationists and farmers were overcome, attempts to redress ecological devastation were doomed to fail. They worked together to gain government support for Landcare across party lines and their efforts paid off: The 1990s were officially declared the "**Decade of Landcare**". From then on, the Landcare movement gained momentum, spreading rapidly to all the Australian states, and the **National Landcare Programme** was launched by the Australian government in 1993. It aims to promote



Horrie Poussard, one of the founding members of the Landcare movement.

cooperation between government agencies, local communities and businesses in order to develop shared approaches for the sustainable management of natural resources. The decision to hire **full-time consultants** to train farmers and volunteers meant a considerable investment, but it was key to the programme's success.

Soon the **Landcare logo** could be found on cereal boxes, stamps and even on special commemorative **one dollar coins**. When the Decade of Landcare came to an end in 2000, 80 percent of Australians were familiar with the Landcare movement. Also important in creating awareness of Landcare's work are the many awards that are bestowed on individuals, groups, communities and organizations every year in recognition of their dedication and commitment.

In 1997 the Australian government founded the **Natural Heritage Trust**, a fund endowed with three billion dollars (two billion euros) to finance natural resource management and environmental conservation programmes throughout the country.

Now, in 2010, there are around 4,000 Landcare groups in Australia with about 500,000 members in all. The progressive mechanization of agriculture, which is steadily increasing in pace, has resulted in ever larger agricultural holdings and shrinking populations in many rural communities. Today only about five percent of Australians are directly involved in agriculture. In rural areas, the social impact of Landcare groups is particularly important: By uniting people in a common cause, they foster a sense of community and boost morale.

Why has Landcare been so successful in Australia?

Landcare groups provide a forum for visionary ideas to be voiced, thus promoting public debate on sustainability and encouraging increasing numbers of people to adopt a long-term perspective. Landcare groups have a flat organizational structure and respect local knowledge. Rather than trying to tell people what to do or introducing comprehensive regulations for all of Australia, the authorities merely offer advice and support. Decisions made at a local level come first, and are then followed up with strategic planning and government monitoring of expenditures. Moreover, Landcare groups also actively incorporate cultural aspects by awarding prizes for nature and wildlife art and embracing local traditions. This is one reason why Landcare has found favour among the **Aborigine** population. They also value Landcare because it offers them a platform to voice their knowledge of the land, its climate and the plants and animals that inhabit it.



Active planting and rainwater storage are the best ways to guard against the negative effects of climate change.

In recent years, the **carbon market** has opened up new opportunities to support Landcare groups in their work. Thus businesses can obtain **carbon credits** by recultivating land. The severe drought in large parts of southern Australia resulted in water shortages in both rural and urban areas and heightened the population's awareness of the vulnerability of Australia's natural environment to climate change.

This in turn led to an extensive debate on the necessity of increasing ecological efforts. One new initiative called **Landcare Carbon Smart** puts local communities in touch with carbon buyers in Australia and abroad.

When I ask **Rob Youl** and **Sue Marriott** what they consider their most important success, it doesn't take them long to come up with an answer: "The greatest achievement of the Landcare movement in Australia is getting so many people involved in working towards a common goal."

The first day of my trip ends at the **Marriott farm** in Wallington. Looking up at the starry sky, I can make out the Southern Cross to the southeast. The only sounds to be heard are the bleating of the sheep and a few soft bird calls. When flying over the area earlier, I was struck by how virtually all the rivers and streams here are allowed to follow their natural course – what a difference to Central Europe! Here on this remote farm, I get a sense of the unspoiled wildness of this continent.



Merino sheep on the farm of Sue and John Marriott. A sheep produces up to eight kg of wool a year; a kilogram sells for three Australian dollars. A lamb sold for slaughter brings 130 Australian dollars.



A license plate from the state of Victoria shows the Southern Cross. Seen in the sky, the constellation resembles a parallelogram.

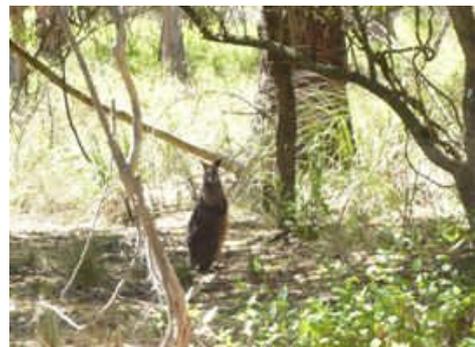
Making the land interesting



Koalas eat up to two-and-a-half pounds of eucalyptus leaves a day. Their essential oils are what make the koalas so drowsy.

one of Australia's most popular nature parks, I am thrilled to see **wild koalas** dozing up in the treetops. Koalas, which were virtually extinct in Victoria by the 1920s, subsist entirely on eucalyptus leaves, and the local Landcare group managed to resettle them on Phillips Island by planting eucalyptus trees there. Today they are a

As I take in the sights of Queenscliff on the morning of 16 February, a sign catches my eye. It reads: "3,500 kilometres to Antarctica." What – that close to the South Pole? The inhabitants of Australia's south coast rarely miss an opportunity to point out that they live at the "other end of the world". Another thing that makes Australia special is its wildlife. When we visit Phillip Island,



A wild kangaroo on Phillip Island. Careful resettlement and management of wildlife has made the nature park into a popular tourist attraction.

popular tourist attraction in the park, along with the **penguin parade**. Visitors love to watch when the world's smallest penguins emerge from the sea each night at sunset and waddle ashore. A neon sign on the bridge to the mainland proclaims that the penguin count yesterday evening was 163. This is tourism at its best – genuine, authentic wonder rather than boring, interchangeable, artificially created "experiences".

Wildlife corridors

That day we visit two more farms: Bill Cleeland's farm on Phillip Island and Bob Davie's Bimbadeen Farm in Ventnor. Both of them incorporate extensive plantings designed to serve as wildlife corridors. Bill Cleeland is thrilled at the visible and audible success. The young farmer also practices organic farming methods, using bacterial cultures to keep the turf on his pasture land healthy. Bob Davie has been strategically planting bushes and shrubs on his land since 1962, and his farm is crisscrossed with green strips that serve as wildlife corridors.



New planting on a farm in Victoria. The paper bags retain moisture and protect the plants from being mowed accidentally.



Wildlife corridors on Bob Davie's farm in Victoria.

As we drive along the banks of a stream now again lined with lush green, we are suddenly enveloped by the pungent smell of freshly cut eucalyptus trees. Davie's farm is a model of what this approach can achieve after a few decades: He has created a diverse environment with a wealth of ecological niches that resembles a miniature garden of Eden. Davie raises cattle and sheep and sells them through **ENVIROMEAT**. The sales and producers' association offers consumers clear-cut guarantees: Its meat comes from free-roaming animals of guaranteed origin and contains no growth hormones, and its members pledge to protect native plants and wildlife. The name of Davie's farm, Bimbadeen, is an Aboriginal term for "place of good view" – in both the literal and the metaphorical sense.



Extensive open-cast mines catch the eye when flying over Australia. Its rivers, on the other hand, are allowed to follow their natural course virtually everywhere.



The Sunshine Coast, a sprawling settlement with no particular centre, as seen from the north.

Sacred trees and precious water

Change of scene: It is the 18th of February, and we are now in southeast Queensland, 100 km north of the state capital of Brisbane and 30 km west of the Pacific coast in a little town called Maleny. When I meet the members of **Barung Landcare**, I notice that they are all wearing green sweatshirts with the group's logo. The reason is simple: There is a lot of tourism in Maleny, and they want people to be able to recognize and approach them. Maleny is situated on a plateau above a valley considered sacred by the Aborigines. The valley is actually a volcano crater and was covered with ancient, giant Bunya pines (*Araucaria bidwillii*) before Europeans settled in the area.



The primeval Bunya pine belongs to the group of gymnosperms that evolved long before the flowering plants, or angiosperms, that are dominant today. Its fruit-bearing pattern is still a riddle to modern science. Not to the indigenous population, however: The Aborigines mysteriously knew in which years the Bunya pine would bear fruit and would gather there from all over Eastern Australia to celebrate. The members of the Barung Landcare group tend to the remaining Bunya pines and explain their significance to today's visitors.

Currently the main export of the region around Maleny is pure drinking water. It is delivered as far away as Brisbane and the tourist centres on the Pacific coast. Thus, in addition to tourism, the local Landcare group focuses on water management in the area to make sure that it gets through dry spells unscathed.



A new building in Maleny – made entirely of wood. A heated political debate on the usefulness of thermal insulation raged in Australia during my visit.



All Landcare groups work with local nurseries; they attach great importance to the use of native seeds.

All the fruit your heart desires

The Maroochy Research Station in Nambour, 30 kilometres to the west of the Sunshine Coast airport, is run by the state of Queensland to help agricultural producers in the region improve the quality of their production and the reliability of their production processes and thus generate higher revenues.

Unsurprisingly given Nambour's location at 26 degrees of southern latitude, researchers at the Maroochy station focus primarily on subtropical fruits such as pineapples, avocados, bananas, mangoes and passionfruit, but work is being conducted on strawberries as well. Once again I find confirmation that fruit consumed in its place of origin tastes much, much better than fruit that has been shipped for hundreds or thousands of miles. The fruit in Nambour is cultivated using traditional methods and is not genetically engineered. I have the impression that the **transfer of knowledge** between research and practical application is faster and more direct in Australia than in Germany.



Scientist Paul O'Hare in Nambour with fruits of the Macadamia nut tree, which is indigenous to Queensland. The Maroochy Research Station works on improving the quality of subtropical fruits.

The coastal rainforest

The subsequent drive over back roads leading through the coastal rainforest unexpectedly turns out to be one of the highlights of my trip. The lush greenery offers a welcome chance to take a few deep breaths, and I look around in awe at the steep mountainsides with towering (over 40-metre-high) eucalyptus trees, monkey puzzle trees, ashes, oaks, pines, banana trees, palms, and countless other trees whose names I don't know. I feel the humidity on my skin each time we pass through a gorge, and I am once again struck by an acute awareness of how much Central Europe has lost in its virgin forests.



Coastal rainforest in southern Queensland.

This, too, is Australia

On the day of my departure I am enjoying the morning sun at a picnic area near Maroochydore airport. There isn't another person in sight. All of a sudden, a police car comes creeping down the street and stops by my rental car. A minute later, at 8:03 a.m. local time, I have received a ticket to the tune of 60 Australian dollars because the car is parked 10 metres outside the marked zone. All my pleading and negotiating are in vain; I am told I can appeal to the council if I like. The two policemen don't lose their official air for a second, and even my desperate plea that my plane is leaving for Europe in two hours leaves them unmoved.

My experience at Sydney airport couldn't be more different. The bus trip to the international terminal costs 5.50, but I only have three Australian dollars left. The driver looks at me, takes my three dollars and waves me inside. On that friendly parting note, I take leave of the fifth continent.



Sydney: The inlets of the sea reaching far inland contribute to Sydney's extraordinarily high quality of life. The famous opera house can be seen on the upper left of the picture.



The reddish layer of smog over Sydney extends about 30 km inland.

The horizon above the outback (upper edge of the picture) shows no sign of air pollution.



A remote farm with water reservoirs and a landing strip near Alice Springs, in the centre of the Australian continent.

Desert in central Australia. On the left, a parched riverbed; on the right, sand dunes.





Afghanistan's snow-covered mountains in the early morning light. They're fighting a war down there!

Sources

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