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## "Only a long-term approach will secure our future"

Swiss agronomist Hans Rudolf Herren has been presented with the "Right Livelihood Award 2013". Herren is one of the world's leading experts in sustainable agriculture and is credited with saving the lives of 20 million people. He believes the award represents a major affirmation of his vision.

Interview: Barbara Engel

**SWISS REVIEW:** How did you react to the news that you would receive the "Right Livelihood Award"?

**HANS RUDOLF HERREN:** It is a wonderful feeling and a great honour to receive such an award. And the knock-on effect is that the award gives us the opportunity to fund a project that we might otherwise have been unable to afford.

**What kind of project is that?**

It's a joint project between the Millennium Institute and the Biovision Foundation called "Changing Course in Agriculture" and is based on the UN's 2008 World Agriculture Report. The primary aim is to promote production by small-scale farmers based on eco-friendly principles. We bring all the stakeholders together and analyse the agricultural and food production systems of countries or regions and identify where problems lie. The people then define their objectives, and we assist them with the selection of measures.

**Did you have a clear idea about the career you wanted to pursue when you were studying at the Federal Institute of Technology (ETH)?**

No, many opportunities have arisen and developed along the way.

**There is a book entitled: "How Hans Rudolf Herren Saved the Lives of 20 Million People". How did you save millions of lives?**

I would firstly like to point out that I didn't achieve that on my own. Working with a team, I was able to combat an insect that threatened cassava, the staple food of 200 million people in Africa. The insect, the mealybug, first appeared in the Congo in 1974. It quickly spread across Africa and had reached Senegal, in the far west of the continent, after three years and had appeared in Maputo in Mozambique within another two years. The cassava fields affected were completely destroyed within a year. Chemical treatment across almost the entire con-

tinent was not an option and we knew that the cultivation of a resistant plant would take at least ten years, so we looked for a biological method.

**How did you go about that?**

We quickly established that the mealybug had been introduced from other regions of the world and had no natural enemies in Africa. So we focused on identifying where the mealybug had come from. First of all, we found a "cousin" in Surinam. We then pinpointed five regions between Mexico and Paraguay. There we eventually found a field containing mealybugs, albeit in very small numbers because natural enemies existed in this region. We transported species that could potentially act as control agents to a quarantine unit in the UK and tested them on cassava plants from Africa. After six months or so it emerged that one of these species, the ichneumon wasp, was an efficient control agent that reproduced easily and was well suited to the environment. We bred the ichneumon wasp in large numbers and dropped them from aeroplanes over the infected regions in Africa. The problem was resolved within a year and a half.

**Which field are you working in today?**

The emphasis of my work has shifted and I now focus on development policy. My path to becoming an expert in development policy also began in Africa. I carried out scientific work and later led projects and, as Head of the Insect Research Institute in Nairobi, managed programmes like the one against the mealybug in the cassava fields. I did that for ten years and realised that conducting good research was not enough. The research results also have to be put into practice, and that requires a positive environment. By that I essentially mean the political environment. The brakes are constantly being applied, and we lag behind the latest findings. I therefore sought a way of approaching issues from the top down

rather than just tackling them from the bottom up.

**You now run the Millennium Institute in Washington. Does that enable you to bring about a top-down approach?**

The institute focuses on training people from both civil society and government to think systematically. We therefore have the opportunity to address matters from the top down.

**What does thinking systematically entail?**

We make people aware that everything in the world is interconnected and that every action has a reaction. This may happen immediately or with a delay. We develop system models in which actions and reactions are presented. An example of systematic thinking that many people are familiar with is the computer game SimCity. My back-

Hans Rudolf Herren was born in 1947. His parents lived in Vouvry in Lower Valais where his father managed a tobacco plantation. Herren attended grammar school in Berne and later studied agronomy at the Federal Institute of Technology (ETH) in Zurich and at Berkeley (California). When he is not away on business, he now lives between San Francisco and Sacramento in California, which is where his wife comes from.

In 1979, Herren went to Nigeria to work for the International Institute of Tropical Agriculture (IITA). He achieved significant research success in combating pests by natural means.

In 1995 Herren received the World Food Prize. The prize money enabled him to found Biovision - a foundation for eco-friendly development - in 1998. This aims to sustainably improve the lives of people in Africa and to sustain nature as the basis of all life. The foundation is headquartered in Zurich.

Herren has been President of the Millennium Institute in Washington since 2005. (BE)

ground as an ecologist is very important as there are often very direct reactions to changes in nature.

**You are often also described as an expert in sustainability. What is sustainability exactly?**

Anything left in a state that is the same as or better than when you first encountered it is said to be sustainable. For example, you can measure the nutrients in the ground in a field. If there are as many or more nutrients after a cultivation cycle without the use of fertiliser, then the production is sustainable. The nutrient or calorie balance must therefore be neutral or positive. We are currently a long way off achieving that in global terms.

**There was a mood of optimism when the UN's Millennium Development Goals (MDG) were set out in 2000. Little of that optimism remains. What has gone wrong?**

The major error was a lack of proper planning. The UN also realised this after a few years. And this is where the Millennium Institute in Washington now comes into play, as a small NGO and not a UN department. We were tasked by the UN with assessing how the MDG could best be

achieved using Ghana as an example. We developed a model in which the eight goals could be simulated. It quickly emerged that broad planning could save lots of money and enable the goals to be attained more effectively.

**What do you mean by broad planning?**

In specific terms, this means the ministries, those, say, of health, the environment and agriculture, planning together rather than each ministry formulating plans and projects for its own particular area. Our model allows the countries to assess each year whether they have attained the annual targets and, if not, which factors have resulted in failure to do so. However, this has so far only been used in a very small number of countries, such as Mali and Mozambique.

**Achieving the goals worldwide primarily depends on the willingness of the large nations to cooperate. What is their attitude?**

There is a general understanding that change is needed, but it is taking a long time to develop the specific measures. However, the Millennium Institute does not produce reviews or reports on countries. We train people, including government representatives, so that they can decide for themselves which is the best or most promising approach to adopt. We provide them with the tools. These planning tools and strategies have long been commonplace in industry but it is just that governments proceed as though they only have an abacus available to them. Our primary objective is to persuade politicians that a forward-thinking strategy and planning are required rather than just four or five-year plans based on electoral cycles. Only a long-term approach will secure a future for all of us.

**The global population is set to reach some nine billion by 2050 according to the latest estimates. Can our planet provide enough food for so many people?**

Yes, it can and could even do so today. We currently produce 4,600 calories per person per day, which is twice as much as we need. The problem is that the right foodstuffs are not being produced and are being grown in the wrong places by the wrong people. We must seek to establish how we can produce food differently, more diversely and more in line with local requirements. In the USA and Europe in particular, we have excess production supported by many subsidies which is then exported, making survival impossible for farmers in the southern countries because they have no chance against subsidised products. We will only be able to feed the global population in the future if we ensure more and better production - in other words by adopting a sustainable approach - in the countries where people actually live, such as in Africa.

**Are you also involved with projects in Switzerland?**

The Millennium Institute developed a model for the Federal Office for Agriculture that is being used to define Swiss Agriculture 2050.

**You have reached retirement age, but you are still working. Are there particular objectives that you would still like to achieve?**

I would like to drive forward a shift towards sustainable development goals (SDG). We adopt a top-down approach to the Millennium Development Goals at the Millennium Institute, whereas the Biovision Foundation focuses on a bottom-up perspective with sustainable development. Combining these two areas still remains a target, and this alternative Nobel Prize obviously gives me a new platform and impetus here. I hope I still have a few years in which to bring policies into line with the work being carried out on the ground.



BARBARA ENGEL is the editor-in-chief of "Swiss Review".