


EU/ US Farmer-to-Farmer Exchange Program, August 8 - August 19, 2007

This project was made possible through the generous support of the European Commission, Directorate-General External Relations

Content

1 Introduction

Between August 8 and August 19, 2007, Ecologic and Environmental Defense conducted a Farmer-to-Farmer exchange program between farmers from the U.S. and EU. The program included field visits to farms and biomass processing facilities in Germany and the U.S. as well as visits to research institutes to observe experimental bioenergy cropping, climate friendly agricultural practices and to discuss the link between climate and agricultural policy.

This report is a summary of the program, participant impressions and a reflection on the impacts of the exchange. It gives an overview about the lessons learned and the conclusions that could be drawn. It also includes participant feedback received during roundtable discussions both in Germany and the U.S. and the results of feedback questionnaires that were distributed following the conclusion of the exchange. Taken together, these elements reveal the ultimate success of the program.[1]

Finally, the report contains an annex, including the articles that have been published in journals, reflecting on different aspects of the program. Two more articles are envisaged to be published in spring 2008[2]. Additionally, in September 2007, Ecologic prepared a newsletter report on its website[3].

The exchange brought together 15 participants from the U.S., some of them accompanied by their spouses and 14 participants from Germany. The group consisted mainly of farmers, but also included policy makers, scientists, NGO representatives and journalists from the United States and Germany with a respective background in bioenergy and carbon saving agricultural practices.

Picture 1: Group picture of all participants (rape seed field of Mr. Oppen, shortly after harvest)

[1] For a detailed overview about the program, time schedules, the full description of all places visited as well as the participants bios see the separate program document, dated August 2007.
[2] To be published in the journals “Agrifuture” and “DLG-Mitteilungen”.
[3] http://www.ecologic.de/modules.php?name=News&file=article&sid=2173

The list below gives an overview of participants.

European Participants	**U.S.Participants**
Andreas Kraemer: Director of Ecologic	Daryll Jamvold: Farmer, KS AgraMarke
Stephanie Schlegel: Ecologic	Bryan Weigle: Environmental Defense
Matthias von Oppen: Farmer[4]	Scott Gigstad: Farmer, AgraMarke
Andreas Lüttger: PIK[5]	Bill Horan: 25x25 biofuels chair[6]
Reinhild Benning: Farmer/ BUND[7]	Justin Knopf: progressive young farmer
Thomas Heidenreich: Bioland certified farmer	Bruce Wright: Montana Grain Growers
Maria Heubuch: Farmer, Chairwoman AbL[8]	John Howard: Farmer, AgraMarke
Detlef Ehlert: Agricultural engineer, ATB	George Quinn: Farmer, Agra Marke
Thomas de Witte: FAL[9]	Lynn Anderson: Farmer, AgraMarke
Karl-Otto Wenkel: ZALF[10]	Jerry Bryan: Farmer, AgraMarke
Wendelin Wichtmann: Duene e.V.[11]	John Hickman: Farmer, AgraMarke
Jürgen Herrle: Farmer and farm advisor[12]	Sara Hessenflow Harper: The Clark Group
Stephan Deike: Journalist[13]	Laura Sands: The Clark Group
Thomas Beil: Sheep farmer[14]	Lance Woodbury: Kennedy and Coe, LLC
	Fred Yoder: Former President of the National Corn Growers Association

Both in Germany as well as in the U.S., due to time contraints, some participants were only able to join the group for certiain portions of the exchange. In Germany for example, journalist Anke Serfling (Journal "Neue Landwirtschaft"), Dr. Rainer Gießübel (BMELV – Ministry for Agriculture and Consumer Protection, Germany), and Manfred Jaehne (a farmer, who's farm was also visited as part of the program) only participated in the German portion. In Kansas, a large group of local farmers from the Manhattan, Kansas as well as some officials from the EPA (US Environmental Protection Agency), attended the site visits at Kansas State University and joined the lively discussion.

Seven of the U.S. farmers were members of Agramarke Inc., and/or Agramarke Quality Grains, Inc and Lifeline Foods, LLC. Agramark Inc, and Agramarke Quality Grains is a tax-

[4] also retired Professor University of Hohenheim
[5] Potsdam-Institute of Climate Impact Research
[6] member of the 25 x 25 ag renewable energy group
[7] Friends of the Earth Germany
[8] „Arbeitsgemeinschaft bäuerliche Landwirtschaft (AbL) e.V. (Association for rural agriculture)
[9] Federal agricultural research centre (FAL), Braunschweig
[10] Agro-landscape researcher at the Leibniz-Centre for Agricultural Landscape Research (ZALF) Muencheberg.
[11] Institute for sustainable use of landscapes at Greifswald University
[12] Naturland Fachberatung / Öko-Beratungs-GmbH (advisory service, organic farming)
[13] „DLG Mitteilungen", also affiliated with the University of Halle
[14] Also affiliated with the University of Greifswald.

exempt agricultural cooperative[15], formed in May 1998 to provide marketing and other business opportunities for its members' crop and livestock production. Lifeline Foods is also involved in on-site pilot ethanol fuel production and research in partnership with ICM, Inc of Wichita, Kansas which was also visited during the trip. The functioning and benefits of the cooperative for each local farmer were of great interest to the German farmers.

The level of diversity of the U.S. farmers also played a large part in the success of the exchange. The U.S. delegation consisted of a mix of localized farmers and those well connected at the national level that are actively involved in pushing for energy policies that benefit the agricultural industry in ways that promote sound environmental performance.

The make-up of the German delegation was different than that of the U.S. with most having some sort of background in agricultural research or agricultural policy, although most run small farm operations of their own. This was a positive dynamic of the exchange as it gave the U.S. participants an insiders view into just how intimately involved the German agricultural sector is involved with energy policies. Overall, the mix of participants with different backgrounds greatly contributed to the discussions within the group as well as to the dissemination of results and lessons learned.

[15] The focus of Agramarke is to increase profitibility for individual producers, with the aim to improve the quality and cost efficiency of it's members' production. Agramarke Inc. is made up of individual family-owned farms whose experience lies in indentity-preserved, commodity marketing programs in and around northeast Kansas, and southwest Missouri. Corn, wheat, and soybeans are the primary crops in Agramarke's geographic region. The cooperative is currently focusing its primary efforts on greenhouse gas mitigation projects which utilize soil carbon sequestration and fossil fuel reductions from no-till farming. Many of their individual members have invested much of their revenue in conservation terraces, ponds and other practices in an effort to avoid soil erosion. Agramarke Inc., members bring their grain product to the market through the auspices of Agramarke Quality Grains Inc and Lifeline Foods, LLC. It's primary business activity is to have its membership of farmers supply identity preserved grain to Lifeline Foods processing and packaging into finished products for entry into domestic and international markets, this allows for over 660 members to have the ability to receive additional value from the identity preserved grain the members grow by processing and marketing such grain.

2 Impressions of the Program

2.1 European Program

The U.S. delegation of farmers arrived on August 8, 2007. The exchange program kicked-off with a "Welcome Evening" dinner in the dining hall of the Hotel Albrechtshof in Berlin. Here, the U.S. farmers were able to acquaint themselves with some their German couterparts for the first time. A general welcome was offered by Andreas Kraemer of Ecologic and Sara Hessenflow Harper of Environmental Defense/Clark Group. Ms. Stephanie Schlegel (Ecologic) and Mr. Bryan Weigle (Environmental Defense) then provided the participants with a brief overview of the program. Mr. Rainer Gießübel, of the German Ministry for Agriculture and Consumer Protection (BMELV) capped-off the evening by officially welcoming the participants to Berlin and Germany for the exchange.

The operational segment of the exchange began on August 9, 2007. Sites visited in Germany included:

2.1.1 The dairy farm of Manfred Jähne (Marquardt Agrar GmbH, Brandenburg)

Serving as an example for the combination of traditional farming practices and the use of renewable energies (biogas, windenergy, solar energy), the participants were able to observe, firsthand, how alternative energy can be used to operate a near fully sustainable farm operation, where agriculturists become "energy farmers," as renewable energies make up for 20% of Mr. Jaehne's farms profits. The 500 ha dairy farm @Marquardt Agrar" utlizes biogas converted from farm seed and animal waste to produce electricity, which is then sold into the electricity grid and bought back at nearly half the cost. All electricity and prodcution yields are continously monitored, using commonly available software systems such MicroSoft Excel©.

Picture 2: Mr. Jaehne explains his "energy farm"

Mr. Jaehne added a profound human element to the visit, as he explained the history of his family and the formation of his present-day farm operation. He explained that his father was one of thousands of East German farmers to have their land disappropriated after World War II; a moment Manfred Jaehne re-calls as one of only two times where he witnessed his father cry. After the reunification of Germany, the government allowed him to partly re-purchase 500 ha of his father's former land. However, since Mr. Jaehne is only part owner, financing the purchase of land inflicts a continous capital drain on his enterprise. Thus, the full

integration of his farm to harness renewable resources is as much about cutting costs as it is about reducing the farm's environmental impact.

2.1.2 Farm of Matthias von Oppen (Gut Lindhorst – Brandenburg)

Since 1993, Mr. von Oppen has been running his 500 ha farm with his wife Barbara. They started farming at Gut Lindhorst after the reunification of Germany, renting and buying back part their former property. The exchange participants observed the von Oppen farm operation by first visiting his research facility where he is working on an initiative with other farmers of the region with the objective to initiate the "Biomass Hydrogen Economy." Prof. von Oppen showed the group his biogas conversion lab as well as one of his hydrogen generators. The group then moved over to his harvesting fields, where he explained the variety and rotation cycle of his crops. The farming system is based on a three-year cash-crop rotation of: 1). Wheat; 2).barley or rye or triticale; and 3). rapeseed (contracted partly for food and partly for bio-diesel). Soil preparation follows the principle of minimum tillage to minimize costs as well as run-off and erosion. Crop residues and minimum tillage also help to support an active fauna and flora in the soil and thus enhance soil fertility.

Participants observed Dr. Oppen's test plot, where he conducts research on the cultivation of fast growing tree species on agricultural land as short rotation coppice for energetic use. He conducts this work in collaboration with the University of Applied science and the petrochemical refineries of Schwedt and Volkswagen. The varieties and crops (poplars, willows, locust, alder, maple and others) are arranged in plots and studied for their growth and yield in 3 year rotations.

Picture 3: Field trip to Mr. Oppens farm, canola field and short rotation coppice sample area

2.1.3 The Leibniz-Centre for Agricultural Landscape Research (ZALF)

The group was greeted by Prof. Karl-Otto Wenkel. Mr. Wenkel gave a presentation on the ZALFs work on land use and climate change impact assessments as well as the development of sustainable multifunctional land use systems, as he explained that sustainable land use systems are flexible and have great potential to adapt to future global climate change conditions. Further presentations gave an overview on particular bioenergy issues, such as how bioenergy cropping affects biodiversity, the climate effects of different technology and production pathways and the functioning of the German Feed in Law (EEG), one of the underlying drivers of the bioenergy boom in Germany.

The group then moved-on to the institute's experimental field stations for energy plants. Here Prof. Wenkel and his ZALF colleague, Mr. J. Hufnagel demonstated ZALF's fully integrated data collection system, whereby sensors buried at various points in the ground

collect data samples for soil and water conditions, and send this information, in real time, to a central computer server where the information can be analyzed by the ZALF agronomists.

Picture 4: Experimental field stations for energy plants at ZALF

2.1.4 Leibniz-Institute for Agricultural Engineering Potsdam-Bornim (ATB)

The visit of the ATB in Potsdam included a broad overview of the institution's research and development activities in precision farming technologies, agricultural practices with regard to carbon saving and production and use of bioenergy sources. The ATBs objective is to create process-engineering bases for sustainable land-use management and to provide techncal solutions for industry. Mr. Detlef Ehlert and his ATB colleagues allowed the group access to many of ATB's retrofitted farm equipment and prototypes, that are applied and researched in order to reduce environmental impact, such as applying site specific fertilizers and other crop protection agents. The tour also provided real life examples of the various possibilities for research with regard to bioenergy production.

Examples of this research includes:

- biogas laboratories,
- fuel cells,
- a crop meter (measures the amount of biomass on the field, without harvesting it)
- geoelectrical sensors for soil mapping and
- a laser guided seed sprayer, which allows the operator to control exactly where the seed will be planted, cutting down on waste and reducing the chances for contamination.

Picture 5: Visit at the Leibniz-Institute for Agricultural Engineering Potsdam-Bornim

2.1.5 Bioenergy village Juehnde (Lower Saxony)

The groups final visit was the bioenergy village Juehnde, Germany's first village to produce heat and electricity by means of renewable biomass (energetic plants in the form of wood chips and silage thus creating a CO2 neutral balance). The public relations and tourism manager for the village gave the group an overview of the historical background, the reasons for creating a "bio-village," and explained the political, administrative, and logistical requirements faced to get the village to be fully self sustaining. He also explained specifically how they produce electricity and heat from biomass. The presentation was followed by a tour of the village power plant. The group was fascinated by the scale of operation (quite diminutive) and how non-labor intensive the power and heat production facility was. The power plant only requires 1-2 full time staff to maintain the operation which produces enough electicity to power all households. In fact, the facility produces twice as much electricity than the village needs. The electricity produced is sold into the electrical grid and re-purchased at half the amount, thus creating a source of revenue for the village without adding CO2 to the atmosphere. Even more impressive, is the heating instructure roughly comprised of 6.000m of submerged pipes that channels steam recouped from the production process to heat each and every home (142 households) in the village, producing about 3.500.00 kWh a year with a water temperature of about 80° C. Altogether, the s ystems helps to avoid 3.300 t of CO2 emissions per year.

Picture 6: Bioenergy village Juehnde: Biogas plant, group discussion, use of wood chips and silage

2.2 Program U.S.

The U.S. portion of the exchange occurred in the Central U.S. Plain states of Kansas and Missouri from August 14-19, 2007. The US program was comprised of a mix of visits to small, family owned farms and publicly and privately funded bio-energy research and development facilities. Similiar to the German portion of the exchange, the group consisted of farmers, agricultural engineers, and scientists with varying interests and experience in bio-energy, no-till based land managment, and soil carbon sequestration practices.

The participants from Europe arrived on the evening of August 14, 2007 and were greeted by Environmental Defense and Ecologic with a casual "Welcome Hour". The first full day of U.S. farm visits was on August 15, 2007 and started with a visit at Lifeline Foods, LLC, St. Joseph, Missouri.

2.2.1 Lifeline Foods, LLC, St. Joseph, Missouri

Bill Becker, Chief Executive Officer and President of Lifeline Foods, LLC, provided the group of 20 participants with a overview of Lifeline's products (both food and ethanol), the relationship of the company to local the producers, the formation of the company and the development of ICM, Inc as part owner. Mr. Becker explained that Lifeline, a Missouri limited

liability company, was formed in the fall of 2002 by its two original member cooperatives: AgraMarke, Inc and AgraMarke Quality Grains Inc. Since the company's inception, Lifeline's main focus has been to process and package identity preserved grain into finished and industrial food ingredients for domestic and international food customers. The producer members of Agramarke Quality Grains, Inc. supply Lifeline with identity-preserved grain. At its facility in St. Joseph, MO, Lifeline converts this member producer provided grain into the snack meal, corn cones, corn meal, corn flour, corn grits, yellow masa, enriched white masa and hominy. Lifeline also has auxiliary mill capability for flaking grits, grain sorghum, and genetic trait specific grain. Lifeline blends and mixes ingredients and extrudes milled products and sells to food industry leaders such as Frito Lay™ . To ensure quality assurance with regard to growing requirements, membership with AgraMarke Quality Grains, Inc is required. It is this relationship between the farmer and the processor that allows Lifeline to utilize the genetic selection to enhance the milling yield and producer quality. This intersection of farmer and processor also ensures food security from the planting of the seed by the farmer to the dinner table of the consumer, and permits the member farmer to benefit from more of a direct share of the profits.

The presentation of Mr. Bill Becker was followed by an introduction of Mike Sobetski, Vice President of Quality and Chief Operation Officer of Lifeline Foods, who spoke to the group about the general operations of the facility. He explained the grain production process from the planted seed of the farmer to the blending, mixing, and extrusion of the product. Mr. Sobetski then explained Lifeline's decision to diversify its business model by exploring opportunities for ethanol production through the use of all of its product streams, including by-products (hominy). He segued into Lifeline's efforts on ethanol production by passing around grain samples at the different stages of conversion.

He briefly explained the inception of Lifeline's partnership with ICM, a Wichita, Kansas based engineering and merchandizing company specializing in dry and wet mill ethanol and design; and introduced Richard Hanson, Manager of the on-site Research and Development Pilot Plant and Lab, ICM. Mr. Hanson explained in more detail Lifeline's efforts in regard to ethanol production and a brief overview of ICM's experience with ethanol production and design. Mr. Hanson explained that ICM led one of Lifeline Foods most important research and development initiatives at the St. Joseph, MO plant. With Lifeline's assistance ICM will install promising technologies, such as corn fractionation and bran gasification, which will help develop the next generation of ICM's grain-to-ethanol production process. The Lifeline Pilot Plant will house traditional milling and fractionation technology, traditional and non-traditional cooking, and fermentation, distillation, evaporation, centrifugation, drying and waste water methanation. The pilot plant will be sized at one million gallon per year so engineering can scale-up operations. The pilot plant will also be used to look at innovative ways to recover energy, generate co-products and cellulose technology.[16]

[16] See also www.lifeline-foods.com; www.icminc.com

2.2.2 Tour of Lifeline Foods plant facility

Bill Becker, Mike Sobetski, and Richard Hanson led the group through a tour of the plant. Mr. Becker began the tour by leading the group through the more traditional section of the grain processing facility. The group was able to see, first hand, the actual machines at work. The group was also able to observe two of the plant's computerized monitoring systems; the former monitored general plant capacity systems and the later monitored systems for quality assurance. Many of the machines observed in this portion of the plant are still in operation, but will slowly be phased out and be replaced by newer equipment that will allow for more flexibility in the use of Lifeline's full array of product streams, including ethanol. Richard Hanson led the group through the rest of the tour. He took the soon to be modified portion of the plant, where the R&D Pilot Plant equipment will be stationed. Most of this equipment is in the process of being installed. Therefore, the ethanol production facility was not yet fully operational. Even without the equipment, the group was able to observe the large scale production potential that was evident by simply walking through the immense Pilot Plant facility. Mr. Hanson also walked the group through ICM/Lifeline's brand-new, state of the art research office and laboratory, where new research on cellulose technology will take place.

Picture 7: At Lifeline Foods it was impressive to see how an actual operational food mill functioned and how the ethanol plant will work.

Tour of Bryan Farms, Inc & Howard Farms, Inc, Hiawatha, Kansas

At the visit of Bryan Farms, Inc & Howard Farms, the group was treated to an interactive exhibit of family owned farm equipment and transport equipment, including, tractors, combines, no-till machinery, and grain storage/driers. The participants were able to climb into the actual equipment and saw a live demonstration of no-till machinery on soil as well as a demonstration of energy saving GPS guided technology for spot fertilizing. Mr. Howard and his son explained their reason for using genetically modified (GMO) corn seed, also by offering a non-GMO stalk and GMO stalk for comparison.

Picture 8: Visit at Bryan Farms, Inc & Howard Farms, from left to right: Jerry Bryan at his farm, discussions in corn and soy fields, explaination of no till farm equipment, group picture of the organisers from Ecologic and Environmental Defense.

2.2.3 Kansas State Univesity, Department Argronomy, Manhattan, Kansas

Mr. Scott Staggenborg provided a demonstration of TH Soil Carbon Model software developed at the Kansas State University (KSU), and Prof. Chuck Rice led a discussion on no-till and the opportunity for carbon crediting in the Central Plains region of the United States. Prof. Rice then took the group on a tour of KSU's "North Farm" Bioethanol research plots, which had offered many varieties of corn, switch grass, and prairie grass, all of which are being studied for its use as a biofuel. An extra group of five regional farmers joined the group for the day, and with them came new and different insights.

Picture 9: Bioethanol research plots at the Kansas State University

Afterwards the group headed 10-15 kilometres outside of Manhattan, Kansas to the Konza Prairie Biological Station. Serving as a natural research station for scientists from around the world, the Konza Prairie serves as the "benchmark" for comparisons with areas that have been affected by human activities. It is one of the last "untouched areas" in the U.S. Plain states of America. The key attraction are 200 plus Bison (Buffalo) that live within the confines of the reserve. The opportunity to intimately observe these majestic animals was viewed as quite a moving experience by the participants.

Picture 10: The visit of the Prairie Biological Station with its Bisons was truly inspiring

Picture 11: Picture of the European group at the Konza Prairie Biological Station. From left to right: Wendelin Wichtmann, Thomas de Witte, Stephan Deike, Andreas Kraemer, Detlef Ehlert, Karl-Otto Wenkel, Thomas Beil, Reinhild Benning, Andrea Luettger, Stephanie Schlegel, Juergen Herrle, Maria Heubuch, Thomas Heidenreich, Matthias von Oppen

2.2.4 Kansas City Board of Trade, Kansas City, Missouri

The KCBT is one of the largest markets for trading of wheat in the United States and the group was able to observe the opening bell from the floor of the trade "pit." A live action explanation of the trade activity was received from Jeffery Borchardt, President & CEO, and Kansas City Board of Trade. One of the stockbrokers, who happened to be a native German speaker, also came over to the group and explained the hectic activity in German.[17]

2.2.5 Mosantos Research Plant Research Facility, Kansas City, Kansas

A frequent point of contention within the group was the use of genetically modified organisms in agriculture. While most of the U.S. farmers both support and also use genetically modified corn and soy on their farms and/or are even seed salesmen, most of the European participants opposed such a use. While the open and always friendly discussions and presentations helped to clarify the counterparts' practical reasons for utilizing or opposing GMOs, as expected, no big breakthrough was made on this issue.

While those in the German delegation critical of GMO voiced concerns about the possible adverse effects to biodiversity, ecosystems due to cross-pollination, impacts on human health, impacts on organic farmers and the threat of seed dependence in developing countries, U.S. farmers argued from a business point of view. They were confident that using

[17] See also www.kcbt.com

GMOs enhances the quality of their yields and offers more financial and management related rewards than choosing to farm without GMOs.

Following these discussions Daryll Jamvold of Agramarke Inc, offered the group the opportunity to visit the Monsanto test plot facility just outside of Kansas City, Kansas, which was not originally included on the program itinerary. This offer was greatly welcomed by the European participants. The Monsantos sales representative first explained the work of Monsanto and tried to answer some of the critical questions asked by the European farmers. Subsequently the group took a guided tour of the Monsantos product line test fields.

Picture 12: Discussion of genetically modied organisms at Monsantos test fields

3 Observations and Lessons learned

Overall, the exchange was a great success. The exchange was able to accomplish what it set out to do: to bring together farmers from both sides of the Atlantic to observe how their fellow farmers, "do what they do, and why they do it". Many of the US farmers were quite impressed with the high level of technical advancements the Germans are already employing in the fields of renewable and biomass energies. There also seemed to be a consensus from the US side on the interplay between farmers and local and federal governments in Germany.

"I was impressed to see diverse examples of applied research stabilized by 10-year, step-down government subsidies; this government support provides a stable environment for innovation while researchers figure out ways to make their projects economically feasible," (John Howard, Howard Farms, Inc.).

"(…) one of the main points that I noticed was the difference in governments between the U.S. and Germany. We don't have the subsidies or incentives to make some of the programs work like they did in Germany." (Scott Gigstad)

[For me it was very fascinating to see] "the spirit of the farmer to organize and build up large enterprises by themselves without relying on governmental subsidies." (Andrea Lüttger)

Text Box 1: Participants feedback on farming approaches and the role of subsidies

For the U.S. farmers it seemed that in German agriculture, the issues of climate change and energy security stand on equally footing with high yields and healthy profit margins.

Moreover, the level that the European Union and German governments invests in agriculture was more than impressive for the U.S. farmers. They were particularly impressed with the fact that the German government subsidizes the sale of power to support the development and implementation of renewable energy at the local level, which stands in stark contrast to the situation in the United States where local people can't participate in wind projects due to a lack of fair market access.

Much like in Germany, the U.S. portion of the exchange was a huge success. The site visits in the U.S. focused more on family farm operations, which gave the invaluable opportunity for the group to see how small U.S. family farm operations have made the autonomous management decision to reduce GHG emissions through no-till farming practices and precision farming technologies.

Many of the Germans were quite impressed with the U.S. farmers' commitment to no tillage practices and equally excited about the prospect of getting credits in a carbon market for engaging in good land use practices. However, others were concerned about the possible administrative costs it would cost to implement such a system in Germany.

The discussion on carbon credits also sparked a debate about the role of farmers and agriculture in energy and climate policies. In the light of possible revenues for climate friendly agricultural practices many argued in favour to link their activities to a carbon credit system. For many of the farmers, such a system makes good economic and business sense. At the same time, many of the participants remain guarded about the idea of a U.S. carbon market, as doubts remain about the ability to gain fair and equitable access to the market.

"Agriculture (farmers) should have the opportunity (within) a national energy policy involving carbon credits. We do not want to be excluded from the national energy policy program. The same can be said for all forms of renewable energy programs. Our concern is that the farmers and local rural communities should not be excluded in favour of opportunities for larger corporations." (Daryll D. Jamvold)

"At the farm level I think the US carbon market is a way for farmers to mitigate green house gas emissions and to gain from it. This could work for German farmers as well. Especially the biogas plants using manure have a high potential. But in my opinion, it is necessary to integrate these activities in the global market as climate change is a universal problem." (Thomas de Witte)

"For me it was surprising to see that the discussion on carbon credits is much more advanced than in Europe, which seems to be implemented in a rather quick way" (Karl-Otto von Wenkel)

"There are people in Kansas who care a lot more about climate change than their government seems to (…) there is no time to waste to fight global warming. We have got people with ideas and visions, we have got farmers, who are willing to do a new job, so - what are we waiting for? (Thomas Beil)

"I intend to report to our German political representatives in discussions that the activities in the US serve as good examples for own national arrangements to support agriculture that contributes to GHG mitigation."(Detlef Ehlert)

"I have been to Washington D.C. and discussed Carbon Sequestration with our elected officials. Our country is not as advanced on environmental issues as Germany is. I believe we are going to have to be able to show the economic benefits of sequestering carbon for, before, for example, it is going to take hold. Our country is still having discussions on whether or not global warming is caused by carbon emissions. Until some of these questions are answered it will be hard to move forward." (Scott Gigstad)

Text Box 2: Participants feedback on carbon credits and agriculture

Further discussions went on about bioenergy policies, partly questioning the U.S. focus on bioethanol, and suggestions were made other resources such as biogas.

"I was impressed with the bio-gas technology and enjoyed learning how Germany was dealing with their energy issues and how agriculture takes part in that.(…) I think we can definitely learn from others and in this case the German people. I also believe that none of us has the right answer and we need to communicate with each other [on] our successes and failures to make more informed and environmentally important decisions." (Scott Gigstad)

"Of all the possible energy production solutions, we must not only focus on the one that is currently most profitable, (i.e. production large plants). Depending on the energy type, we also have numerous decentralized solutions. (…) On discussions of bioenergy and agriculture, we always need to ensure the world's food supply first. 'Fuel instead of bread' – as in some parts of Brazil – must not become an established model." (Maria Heubuch)

"It was extremely interesting to see a different view point on a national energy policy. Ideally, I think America should have an energy policy which promotes security, the environment, energy efficiency, conservation of resources and affordability." (Daryll D. Jamvold)

"It was interesting, that, on the one hand, the main idea within agriculture in Germany seems to be the production of biogas connected with heat and power production, while the American examples showed examples for CO2 sequestration by no tillage systems and biofuel production via alcohol. These are very different ways (from the technical and the efficiency point of view) to get a solution! (…) My opinion is encouraged that the most cost effective ways for mitigation of fossil fuels are being considered first. These are often not in agriculture but can be obtained by replacing fossils for industrial raw materials with renewable materials. Substitution of fuels like gas or diesel should be the very last solution.(…) In Kansas farmers seem to have no experience with biogas production. Yet, there seems to be a big potential for the production of bioenergy at least on animal keeping enterprises." (Wendelin Wichtmann).

"As a farmer, I could see our American colleagues efficiently operating their farming systems, making full use of modern technologies (GMO). As a planning agent I was surprised to notice their limited vision and fixation on bio-ethanol. As a scientist I was intrigued by the idea of certifying carbon

sequestration from no-till farming for sale to the industry (KSU).(…) I should like to see further discussions about bio-fuels, especially Green Hydrogen." (Matthhias von Oppen)

[It was interesting to see the] "progress Germany [has made] on bio-energy; the new ideas and what is beneficial. We learned a lot through the farmer/farmer exchange. We need to continue research on bio-energy & carbon sequestration. Our government is not unified like the German government; more grant money spent on these issues. We need to make the public more aware of the benefits of bio-energy. This needs to be done through the political system. Too many votes in our government are cast along political lines and maybe not for the benefit of our people." (Jerry Bryan)

[One should] "try to find a well-balanced and diverse way of producing bio-energy and to support promising and efficient new techniques against negative lobby interests." (Stefan Deike)

"We have to find a solution for the 'food-or-fuel-problem', which means that we have to find a ways and means to establish an overall sustainable development. – this solution cannot be simply a technological solution (in my personal opinion) but as well a matter of lifestyle." (Thomas Beil)

"Biomass production must take place according to regional circumstances. It requires differentiated solutions. However, all production must be bound to sustainability compliance criteria. (…) Instead of an ever increasing amount of regulation, private initiatives should find more support in Europe and Germany. This will also require a stronger link between science and practicing farmers as well as interdisciplinary research. " (Karl-Otto von Wenkel)

"The impact from bioenergy, especially from biofuels, on the climate change seems to be rather low at the current level of development. (…) Keeping this growing demand in mind, politicians should concentrate on the most productive energy lines, e.g. the usage of wood for heating. To me there is no reason to burn oil for heating houses with a very low taxation of heating oil and subsidising biofuels to become autonomous from oil. If the politicians want to find ways to become less dependent on the current forms of bioenergy, it is necessary to invest more into the research and to support the second generation of biofuels."(Thomas de Witte)

Text Box 3: Participants feedback on bioenergy issues

However, for the German participants it was sometimes surprising to see that for U.S. farmers the question of profitability seemed always to be primary to all other considerations.

"It was interesting to learn, that the question of profits dominates the discussion of agriculture in the U.S., and paying much less attention on environmental concerns, as in the case of GMO use." (Karl-Otto Wenkel)

"US-farmers are very profit oriented. However, they are more interested in soil conservation than German farmers (…) And US farmers seem to have good experiences in co-operation on a supra farm level (or have they been forced into that by economic pressure?)" (Wendelin Wichtmann)

"I found the personal exchange with the U.S. farmers very fruitful and was impressed to see that obviously there is a change in values among them, which has led them to find new ways to combine rising profits with questions of soil and climate protection, that I liked a lot." (Thomas Heidenreich)"

"I think it was good for the Americans to hear from the Germans their strong opposition to GMOs. Also, I think the Germans needed to hear the GMO issue from the technical and American point of view. I guess that I don't expect the Germans to change and I know we won't change because we started as a Non-GMO organization and our membership demanded the new technology. From the American point of view, using new biotechnology products has more financial and management reward for the farmer than not using them. We totally trust our government in their approval procedures for these products which provides one of the most efficient and safest food supplies in the world." (Daryll D. Jamvold)

Text Box 4: Participants feedback on the role of profits in U.S. farming

One of the most successful aspects of the overall exchange was the simple human interaction of the German and U.S. farmers. As occurs in most group situations, the two delegations were hesitant to converse with one another in the beginning. However, once the first full day was complete people began to "come out of their shells" and interact with one another. This is due, in large part, to travelling in a small, 45 passenger bus. Many of the trips to sites took some hours in duration, and the farmers took advantage of this time to

converse about the differences and similarities in farming practices, family backgrounds, calculating acres to bushels etc. Through these conversations, a number of personal relationships blossomed.

"There is nothing that replaces personal contact. For me the most valuable part of the trip was meeting and networking with the German people. You learn so much more and much faster by personal contact than you do by reading or listening to another person's interpretation." (Scott Gigstad)

"For me, what was most important were the contacts made with other participants in Germany and the US, and how it will improve my future work. As the problem of renewable resources becomes more and more important in the future and as this directly affects agriculture, we need to think about and discuss all possible solutions." (Maria Heubuch)

Another aspect that contributed to the success of the German portion of the trip was the inclusion of six of the U.S. Farmer's spouses on the trip, as six of the U.S. farmers decided to purchase air tickets for their spouses in order to do some travelling in Germany prior to the beginning of the German portion of the exchange. The participation of their spouses was invaluable as it created a gender balance that would not have otherwise existed. Although, the spouses were just casual observers, it was apparent by their knowledge of the agriculture issues and their mastery of the jargon, just how important a role they play in the daily operations of their family farms. Moreover, for most, this was the first trip for the farmers outside the continental United States, and they may not have participated without the inclusion of their spouses. As a result, the trip deeply affected many of farmers who participated in the exchange.

Once the group arrived in the U.S. it was also great to see, and very much appreciated by the European delegation, what efforts had been made to add extra events to the program. One such instance was a calve roping exercise organized by the family of one of the U.S. participants. The Germans seemed to be fascinated by the roping competition, and the U.S. farmers seemed humbled that the Germans were so appreciative of their efforts to organize the event. Another occurred when a visit to a leading GMO seed retailer's research plot was added to the program. Although, they asked tough questions, the Germans were courteous and respectful to the presenters. These actions seemed to go a long way in impressing the farmers who worked so hard to organize the activities.

Beyond this, there are also lessons to be learned. While the organisation, structure of the program and the mixture of participants from different backgrounds greatly contributed to the success of the program, there are some steps that could be taken to improve the execution of an equivalent future exchange program. One such step could be to coordinate the dates for the exchange to better coincide with the farmer's harvest schedules, allowing more farmers to participate in the full program and to secure commitments from all participants to ensure group cohesion throughout the duration of the whole program. While the time chosen allowed participants to experience ongoing farm activities, it did hinder some others (particularly on the U.S. side) to accompany the group on all site visits as they were needed on their own farms. The time constraint was also felt during the selection procedure within Germany, where it was particularly difficult to find farmers that could spare 10 days away from their farms, resulting in a slight overlap of non-practical farmers on the German side of participants. Therefore, an effort should be made to recruit participants from a wider range of professional backgrounds – thus striking an even better balance of practical farmers, agricultural researchers, and policymakers. This would allow for an even wider dissemination of results, be it in farm practices, research, policy and/ or media.

While the above points for improvement may improve a potential exchange to come, all participants agreed in their evaluations that this exchange was a once in a lifetime experience, Some were so deeply affected by the exchange that plans were made to visit one another after the conclusion of the trip. The text box below shows a selection of participant's feedback responding to the question of their overall impression of the exchange, gathered through the distributed questionnaires.

"It was a very enjoyable experience; well prepared and excellently organized." (Matthias von Oppen)

"I thought the exchange program was excellent (…) I had a wonderful educational experience and would do it again! (…) I know from visiting with our farmers, they very much appreciated this opportunity and it opened their eyes to new ideas and changes. (…) I believe these farmers will use this experience in making business decisions both for themselves and as directors of the various companies they lead. ..[such as]… a business decision to adopt technology or ideas which will reduce greenhouse gas emissions ." (Daryll D. Jamvold)

"The participation at this exchange was very impressive for me. As a farmer I do not often have the opportunity to discuss these issues with other farmers to such an extent. The exchange was very well prepared and included an intense program." (Thomas Heidenreich)

"The meeting with farmers from Kansas, their insights as food producers, soil conservators, and players of a modern, high profitable and forward-looking company (Life Line) was very impressive (…) There was nothing I did not enjoy. (Andrea Lüttger).

"I really enjoyed the German part of the trip and thought it was very educational. I enjoyed getting to visit the German farms and see the rural parts of Germany." (Scott Gigstad)

"I think the trip was well arranged and organized. There was a good combination of scientists and farmers so that discussions always had a background on the real farm level. We were able to make out different strategies in bioenergy between Germany and the United States by visiting different facilities like the ethanol plant in the States or the bioenergy village Jühnde in Germany. This realistic information combined with a theoretical instruction was always a good point to start discussions." (Thomas de Witte)

"The project was very informative. Both, the German and the American parts gave insights using practical examples on CO2 mitigation that you cannot find in papers or books." (Wendelin Wichtmann)

"An important point of the program was, that it brought together people from different backgrounds and ages and the opportunity to exchange about different point of views and the future of agriculture in friendly and fruitful discussions without excluding controversial issues such as GMOs." (Karl-Otto von Wenkel)

"[My overall impression of the exchange was that it was] very informative and innovative, with a high added value of information and a well-balanced selection of participants and destinations to be visited." (Stefan Deike)

"I found the exchange very interesting with an exciting program, and more importantly, the time needed to talk to the other participants from Germany and the US.(…) It was an exciting exchange and I am glad to have met you all" (Maria Heubuch)

Text Box 5: Participants feedback on their overall impression of the exchange

Throughout the duration of the two week exchange program, it was evident that the participants were fully engaged in the program activities and thoroughly enjoyed one another's company. In the truest sense of the word, this two week program was indeed an exchange, as we at Ecologic and Environmental Defense became mere facilitators. The participants took the reins and helped us complete a truly successful program.

4 Annex: Publications about the exchange

Copy of publication “Landwirte als CO2-Haendler”, published in “DLG-Mitteilungen”, November 2007, Author: Stefan Deike

PANORAMA *Klimawandel*

Landwirte als CO_2-Händler

CO_2, das US-Landwirte auf ihren Flächen durch die Art der Bewirtschaftung zusätzlich binden, können sie an der Börse zu Geld machen. Stephan Deike zeigt, wie das funktioniert.

Fotos: Deike

Pfluglose Fruchtfolgen in den USA enthalten häufig Mais und Sojabohnen.

Während in Mitteleuropa noch diskutiert wird, inwieweit die Landwirtschaft durch die Bindung von Kohlenstoff im Boden dazu beitragen kann, die Kohlendioxid (CO_2)-Anreicherung in der Atmosphäre zu reduzieren, hat man in den USA schon ein fertiges Konzept. Seit 2003 können Kontrakte über CO_2-Mengen, die in landwirtschaftlich genutzten Böden gebunden werden, am Chicago Climate Exchange (CCX) umgeschlagen werden. Das funktioniert ähnlich wie der Handel mit anderen landwirtschaftlichen Rohstoffen.

Im Jahr 2007 wurden dort mehr als 1,5 Mio. t CO_2-Equivalente zum Durchschnittspreis von 3,75 $ pro t CO_2 gehandelt. Käufer dieser CO_2-Zertifikate waren unter anderem Ford, DuPont und International Paper.

Landwirtschaftlich genutzte Böden sind ein riesiges Reservoir für Kohlenstoff (C). Durch die Inkulturnahme vor mehreren hundert Jahren sowie die Intensivierung der Bodenbearbeitung wurden in den USA jedoch fast 50 % der in den Böden gespeicherten C-Mengen freigesetzt, so Prof. Chuck Rice von der Kansas State Universität. Er ist Mitglied im renommierten IPCC-Klimagremium. Rice nennt die Nutzung von Direktsaatverfahren, die Umwandlung von Ackerland in Grünland, ein verbessertes Grünlandmanagement sowie die Aufforstung landwirtschaftlich genutzter Flächen als Möglichkeiten zur neuerlichen C-Rückbindung im Boden (Sequestrierung).

Auf Ackerflächen wird eine Intensivierung der Produktion sowie eine Verringerung der Bodenbearbeitungsintensität angestrebt, um eine möglichst hohe Menge an Ernte- und Wurzelrückständen bei gleichzeitig geringer Umsetzungsaktivität des Bodens zu gewährleisten. So haben Untersuchungen der Kansas State Universität gezeigt, dass die Menge an im Boden gebundenem C in einer Fruchtfolge, bestehend aus Körnermais – Weizen (+ Zwischenfrucht) – Soja deutlich höher war als im dort weit verbreiteten Mais-Soja-Fruchtwechsel.

Die Vermeidung von Überweidung und eine gezielte Düngung tragen dazu bei, die C-Bindung auf Weide- und Grünland zu steigern. Auch ein regelmäßiges Abbrennen dieser Flächen beeinflusste den Futterertrag und die C-Bilanz positiv.

62 DLG-Mitteilungen 11/2007

Die C-Rückbindung auf Direktsaatflächen nimmt jedoch innerhalb des CO_2-Zertifikatehandels des CCX die wichtigste Position ein. Die Interessen der Landwirte am CCX werden durch die National Farmers Union und das Iowa Farm Bureau vertreten. Im Jahr 2007 waren etwa 800000 ha pfluglos bestellte Flächen in den USA für das Programm registriert und die Farmer somit berechtigt, eine Vergütung für die dortige CO_2-Sequestrierung zu erhalten. Die Landwirte verpflichten sich dabei, mindestens zehn Jahre Direktsaatverfahren anzuwenden. Je nach Standortbedingungen wird eine jährliche C-Bindung von 0,15 bis 0,4 t C pro ha veran-

Prof. Chuck Rice von der Kansas State University erklärt das System der CO_2-Börse.

schlagt. Dies entspricht etwa 0,5 bis 1,5 t CO_2 pro ha. Zusammen mit den relativ niedrigen Handelspreisen (3 bis 5 $/t CO_2) ist dies vermutlich der Grund für die bisher eher geringe Verbreitung des CO_2-Handels der Landwirte. Laut Schätzungen könnten insgesamt 20 bis 40% der angestrebten CO_2-Reduktionsziele in den USA durch die Bindung von C bzw. CO_2 in landwirtschaftlich genutzten Böden erreicht werden.

Die C-Bindung in Böden ist begrenzt und nach Einschätzung von Prof. Rice wird in 30 bis 50 Jahren nach der Einstellung neuer Fließgleichgewichte sogar wieder C freigesetzt. Trotzdem kann die C-Bindung in Böden als Übergangslösung angesehen werden, bis neue CO_2-freundlichere Energiequellen verfügbar sind. Die C-Sequestrierung in Böden ist darüber hinaus im Gegensatz zu anderen Verfahren wie der geogenen oder aquatischen CO_2-Speicherung (Einleitung von CO_2-Gas in tiefere Gesteins- und Bodenschichten bzw. in tiefe Meeresschichten) praxisreif, billig und weit verbreitet. Bei der Umstellung auf Direktsaat werden außerdem Kraftstoff, Geld und Zeit gespart. Neben »Gratisleistungen« wie der Verringerung von Wind- und Wassererosion sowie der Verbesserung der Wasserhaltefähigkeit der Böden sprechen laut Prof. Rice auch die Tatsache, dass das Ackerland im Gegensatz zur Aufforstung in der Produktion bleibt und die Erhöhung der Wertschöpfung in der Landwirtschaft für pfluglose Verfahren zur Reduzierung des Gesamt-CO_2-Ausstoßes.

Stephan Deike,
Universität Halle-Wittenberg

CO_2-Handel auch bei uns?

Ist ein Handel mit CO_2-Zertifikaten durch die Landwirte auch in Europa denkbar? Neben der Bodenbearbeitung sind viele andere Faktoren für die C-Bindung im Boden verantwortlich, vor allem die Standortbedingungen wie Boden- und Klimaverhältnisse, der ursprüngliche Humusgehalt bzw. die bisherige -versorgung der Böden sowie Fruchtfolge, Düngung und Ertragsniveau. In den USA sind Direktsaatverfahren vor allem dort weit verbreitet, wo Wind- und Wassererosion große Probleme bereiten und sehr tonhaltige Böden vorherrschen. Diese Böden weisen eine gute Eigenlockerung als Folge von Quellen und Schrumpfen durch Wasser und Frost auf, außerdem häufig eine hohe biologische Aktivität. Weitere wichtige Faktoren, für die C-Bindung im Boden sind die angebauten Fruchtarten und die Menge und Qualität an Ernte- und Wurzelrückständen, die sie hinterlassen. So müssen US-Landwirte, die am CO_2-Zertifikatehandel teilnehmen wollen, den Anbau von Sojabohnen auf maximal 50% in der Fruchtfolge beschränken, da diese weniger auf dem Feld verbleibende Biomasse produzieren als z. B. Körnermais oder Weizen.

In Deutschland sind etwa 40% der Böden Sande mit relativ geringem Tongehalt, die zur Selbstverdichtung neigen. Dort sind Verfahren mit sehr stark reduzierter Bodenbearbeitungsintensität selbst ohne die auftretenden phytosanitären Probleme mit einer hohen Ertragsunsicherheit verbunden. Auf Hochertragsstandorten ergeben sich Probleme vor allem durch die hohen Strohmengen und die kurzen Brachezeiten in wintergetreidebetonten Fruchtfolgen. Die pfluglosen Fruchtfolgen im mittleren Westen der USA enthalten häufig Mais und Sojabohnen. Auch dort fallen zum Teil sehr viel Ernterückstände an, z. B. nach Körnermaiserträgen von 10 bis 12 t/ha. Diese zersetzen sich jedoch wegen des günstigen C/N-Verhältnisses relativ zügig und behindern bei einer Aussaat mit geeigneter Technik den Auflauf von Soja im darauffolgenden Frühjahr kaum. Hingegen berichten Farmer von Problemen beim Anbau von Soja oder Mais nach Weizen. Denn das sich langsam zersetzende Stroh behindert Aussaat und Feldaufgang und verringert die notwendige Bodenerwärmung. Probleme, die bei einem Ertragsniveau von 3 bis 5 t Weizen pro ha und einer Zwischenbrachezeit von 8 bis 9 Monaten auftreten, und mit Sicherheit auch bei uns während der Rapsaussaat nach einem 10-t-Weizen auftreten würden. Hinzu kämen die vielfach diskutierten Risiken extensiver Bodenbearbeitungsverfahren, wie der erhöhte Krankheits- und Schädlingsdruck sowie eine zunehmende Verunkrautung.

Zwar ließe sich auch in Europa nach Blattfrüchten und Sommergetreide die Bearbeitungsintensität stark reduzieren, doch zum einen sinkt der Anbauanteil dieser Fruchtarten stetig. Zum anderen würden der nach Wintergetreide häufig notwendige tiefere Grubberstrich bzw. der Pflugeinsatz zu einer stärkeren Umsetzung der im Boden gebundenen organischen Substanz führen. Durch die tiefer lockernden Mulchsaatverfahren, die vor allem auf den besseren Standorten mehr und mehr angewandt werden, erhöht sich zwar der Gehalt an organischer Substanz im oberen Bearbeitungshorizont, der Gesamt-C-Gehalt des Bodens nimmt aber nicht in jedem Falle zu. Überdies ist zu prüfen, inwieweit der Gehalt an organischer Substanz im Boden bei den teils hohen Ausgangsgehalten noch gesteigert werden kann. Sehr hohe Gehalte an organischer Bodensubstanz bedingen außerdem durch höhere Mineralisationsraten häufig Nährstoffverluste.

Gegen einen Handel mit CO_2-Emissionsrechten durch die Landwirtschaft in Europa spricht insgesamt aber vor allem die geringe Verbreitung von durchgängiger Minimalbodenbearbeitung oder sogar Direktsaat. Außerdem würde ein vermutlich erheblicher Verwaltungsaufwand bei relativ geringen Vergütungen auf die Landwirte zukommen. Nicht zu unterschätzen wäre auch das Risiko für den Landwirt, sich langfristig auf sehr flache Mulchsaatverfahren oder Direktsaat und möglicherweise auch auf bestimmte Fruchtfolgen festlegen zu müssen.

Copy of Article “Wissensdurstige US-Farmer”, published in “Neue Landwirtschaft”, September/2007, by Anke Serfling

Wissensdurstige US-Farmer

Deutsche und amerikanische Landwirte lernen voneinander

Umweltschutz und USA? Für viele passen diese beiden Begriffe nur schwer zusammen. Doch die Zeiten scheinen sich zu ändern. Ein Indiz lieferten 14 US-amerikanische Farmer, die nach Deutschland gereist sind, um sich über das Thema Erneuerbare Energien mit heimischen Landwirten auszutauschen. Im Rahmen des „Trans-Atlantic Farmer Exchange Programs“ tourten deutsche und amerikanische Landwirte gemeinsam durch das Land. Ziel waren landwirtschaftliche Betriebe in Brandenburg, die aus Wind, Sonne und Biomasse Energie gewinnen, Institute, die das Thema Erneuerbare Energien im Fokus haben und das Bioenergiedorf Jühnde in der Nähe von Göttingen.

Die Gäste aus Übersee waren beeindruckt. Die Erzeugung von Strom aus alternativen Quellen ist zwar in Amerika bekannt, die Größenordnung der deutschen Produktion überraschte allerdings die meisten. Schon während der Busfahrt säumten Windräder die Autobahn in Richtung Norden und bestärkten das Gefühl, dass Klima- und Umweltschutz in Deutschland ernst genommen werden. Doch nicht nur die Technik begeisterte.

Auch die abwechslungsreiche Landschaft fand ihre Fans unter den Gästen. Beneidet wurde die Nähe zwischen den Bergen im Süden und dem Meer im Norden von Deutschland. Vergleicht man die Dimensionen, verwundert die Aussage nicht. Nimmt doch allein die Fläche von Kansas rund 60 Prozent von Deutschland ein.

2.500 Hektar im Durchschnitt

Im Durchschnitt bewirtschaftet ein Ackerbaubetrieb in Kansas 2.500 ha. Angebaut werden hauptsächlich Mais und Sojabohnen. Fünf der amerikanischen Farmer sind führende Mitglieder der AgraMarke, Inc., aus der die Organisation „Lifeline“ hervorgegangen ist. Rund 800 Farmer aus Kansas, Missouri, Nebraska und Iowa lassen ihren Mais über Lifeline verarbeiten und vermarkten. Zunächst wird der Mais für die Nahrungsmittelindustrie produziert. Das, was nach dem Verarbeitungsprozess übrigbleibt, wird zu Bioethanol verredelt. Neben den vordergründigen Zielen wie Vermarktung, Qualitäts- und Einkommenssicherung stehen Projekte, die die Aspekte des Umweltschutzes und der Nachhaltigkeit beinhalten immer mehr im Fokus von AgraMarke,Inc. Theoretische und praktische Informationen, die genau diese Projekte in den USA vorantreiben, erhielten die Farmer von deutschen Landwirten.

Oben: 40 Landwirte, davon 14 aus Amerika, haben am Austausch teilgenommen.
Unten: Dr. Manfred Jühne (Mitte) zeigt den Gästen seinen Betrieb. *Anke Serfling*

Deutschland ist Vorreiter

Die Agrar GbR Jühne/Marquardt im brandenburgischen Wittstock ist ein Paradebeispiel, wenn es um nachhaltige Energiegewinnung geht. Ein Windrad, eine Solar- und eine Biogasanlage speisen insgesamt 4,2 Mio. KWh pro Jahr ins Netz. Die Vergütung erfolgt auf Grundlage des Erneuerbare-Energien-Gesetzes (EEG). Der Anteil der Bioenergie am Gewinn des Betriebes betrage rund 20 Prozent. Im Vergleich bringe die Biogasanlage mit 150 KW das meiste Geld, so Kurt-Herwig Vogel, der die Anlage in der Agrar GbR betreut.

In welcher Form und vor allem in welcher Höhe der „grüne Strom“ in Deutschland gefördert wird, war von ganz besonderem Interesse für die Farmer aus Übersee. Letztendlich steht ja die Frage nach dem Profit an erster Stelle. In den USA sei eine Unterstützung vom Staat, wie sie in Deutschland stattfindet, nicht denkbar. Die Regierung sei einfach noch nicht so weit und Biogasanlagen würden in Kansas nur von Farmern mit großen Viehbeständen betrieben. Auch die Einspeisung in das amerikanische Stromnetz wäre ein Problem, so Scott Gigstad, Farmer und Vorstandsmitglied der AgraMarke, Inc. Schon allein die Struktur des Netzes, das meist strahlenförmig verläuft, und die Grenzen zwischen den Bundesstaaten wären hinderlich. Dennoch war das Interesse an der Technologie, den Projekten und den neuesten Forschungsergebnissen groß.

Nach dem Aufenthalt in Deutschland flogen die Teilnehmer gemeinsam über den Atlantik. Ein spannendes Programm zeigte den Deutschen, wie in Kansas Landwirtschaft betrieben wird. *(se)* **NL**

Das „Trans-Atlantic Farmer Exchange Program“ wurde von Ecologic und environmental defense zusammengestellt und organisiert. Unterstützt wurde das Projekt von der Europäischen Union.

www.ecologic.eu
www.environmentaldefense.org