

# iamo

Leibniz Institute of Agricultural Development  
in Transition Economies



# 2016



Leibniz Institute of Agricultural development in  
Transition Economies (IAMO)

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## IAMO 2016 – Foreword

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The German Committee on Eastern European Economic Relations has been representing the interests of the German economy in Russia, Eastern Europe and Central Asia since 1952. The significance of the agricultural sector for Germany's economic relations with Eastern Europe and the CIS has been increasing steadily, with considerable support from the activities of the Committee's agriculture work group, which is dedicated to strengthening contacts in the agricultural and food sector, also in difficult times.

Countries like Russia, Ukraine and Kazakhstan, with their large, fertile expanses of land, will play a crucial role in feeding a global population which continues to grow at a rapid rate. At the same time, the modernisation of the structures required in these countries offers great opportunities for German agriculture. With its expertise in analysing the processes of change in our target region, IAMO is an indispensable partner for our work. An example of our collaboration are the joint events we organise each year at the Global Forum for Food and Agriculture at Green Week in Berlin. For years now we have benefited from the Institute's scientific expertise and its key role in the continuing dialogue between business, politics, science and the wider public.

The German Committee on Eastern European Economic Relations will keep focusing on the modernisation

of the agricultural sector in the future, for which we will continue to depend on IAMO's wealth of experience. We look forward to many more joint projects!



*Dr Eckhard Cordes  
Chair of the German Committee on  
Eastern European Economic Relations*

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## Introduction

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In 2015 the topic of migration dramatically became more urgent. Mass flight has not been limited to remote war-torn areas; waves of migration have also begun in those countries of Southeastern Europe that are unable to offer their citizens a future. The most obvious case here is Kosovo. Within the EU, a cross-party consensus has emerged that combating the causes of this flight in the countries concerned is of great importance for their long-term stability. Intensive research at IAMO into the causes of rural poverty and how to combat this, as well as into labour markets and migration in poor regions of Europe and Central Asia – generally rural areas – is helping to develop sustainable solutions. Frequently these are regions that are direct neighbours of the EU, whose destabilisation has an impact on the entire continent.

An example of IAMO's solution-oriented scientific engagement is the work of German, Albanian and Kosovan scientists at the Institute as well as with partners locally. Motives for migration from Kosovo to Germany include disappointment at the economic and political development there. Rapid and thoroughgoing deportation of immigrants does not solve these problems locally; rather it risks exacerbating a cycle of increasing dissatisfaction in Kosovo, which in turn will lead to even greater uncontrolled emigration. The only sustainable way forward is to

develop functioning state structures in the country itself. This complex yet pressing issue is dealt with in more detail in the first article in this IAMO annual, as well as in IAMO Policy Brief 24, "Mass exodus from Kosovo: How a struggling state loses its citizens", which is available in German, English and Albanian at: <http://www.iamo.de/publikationen/iamo-policy-briefs/>.

At the same time, it is vital to inform the German public that Germany urgently needs immigration. Even in the rural areas of eastern Germany, which still have above-average levels of unemployment, there is a lack of skilled workers in agriculture, as well as insufficient suitable applicants for agricultural jobs that require training. To rectify this, a joint project, funded by the Federal Ministry of Education and Research (BMBF) has been set up, entitled "Alfa Agrar – Competence Management to Promote Skilled Foreign Workers in Agriculture". The aim of this project, in which IAMO is involved, is to develop a practical scheme for agriculture that helps foreign skilled workers obtain jobs in German agricultural enterprises. You can find out more about the Alfa Agrar project in the second article in this annual.

This problem of eastern Germany is found even more acutely in Central and Eastern Europe and Central Asia. In many of these rural regions, the lack of skilled

agricultural workers and poor incentives for developing a diversified rural economy are major barriers to agricultural recovery and improving the socio-economic situation. For all these different reasons, the focus of the IAMO Forum 2016 will be rural labour markets and labour migration, and their correlation with rural development. Entitled "Rural Labor in Transition: Structural change, Migration and Governance", the Forum will take place from 22-24 June in Halle (Saale).

Recently there has been a surge of interdisciplinary research on Central Asia, as can be seen by four new projects with third-party funding: one financed by the German Research Community (DFG), two by the Volkswagen Foundation, and one by the Federal Ministry of Education and Research (BMBF). The topics range from a comparative analysis of the specific problems of Central Asian irrigation farming and migration decisions in rural Kazakhstan, to the development of strategies for harmonising agriculture and biodiversity in sensitive steppe regions.

The international EU joint project, COMPETE, an innovative study of the competitiveness of European value chains in the food sector, and coordinated by IAMO, was brought to a successful conclusion. On 22 September 2015 a final workshop was held in Brussels for leading representatives from politics, science and farming to discuss the policy recommendations derived from the various research findings. Then, on 29 September, a parliamentary evening for members of the German Bundestag was held on the same topic.

It would be impossible for IAMO to respond quickly to the changing requirements of research, facilitate exchange between science, business and politics, as well as support young academics from more than 20 countries without a modern administrative department that meets the highest demands. Especially given the increase in competition in research, both nationally and internationally over the last few years, a department that can react rapidly to unforeseen problems without neglecting the principles of proper administration is a big plus. For this reason we should like to offer our thanks to the administrative and technical department for their extraordinary work.

In 2015 IAMO had to focus on the external evaluation that takes place every seven years by the senate of the Leibniz Association on behalf of the Joint Science Conference of the federal administration and the *Länder* (GWK). All Leibniz institutes must undergo this evaluation, which determines their financing. Especially in such a year, IAMO must express its gratitude to the Ministry of Science and Economic Affairs of Saxony-Anhalt and the Federal Ministry of Food and Agriculture (BMEL). Representatives of both institutions have given important stimulus to IAMO's work and, with their wealth of expertise, have always been on hand to offer advice. The same is true of the members of the Institute's Board of Trustees and Scientific Advisory Board. We would, therefore, like to offer them our express thanks as well.

As mentioned above, the first two articles on the mass exodus from Kosovo and the findings of the Alfa Agrar project deal with highly topical issues of uncontrolled migration and the economic stabilisation of agricultural-rural areas. The third paper summarises the findings of a study on the role of the not-for-profit sector in the development of rural areas in the Czech Republic. This is followed by two analyses on the impact of climate change on agricultural yields, the first looking at Ukraine, the second Russia. The sixth article deals with the effects of the Western embargo on the Russian food industry focusing

on pork. Rural development in a broad sense is the subject of the seventh article, on China. Specifically, it looks at the relationship between better provision of glasses and success at school for near-sighted children from poor families with a rural background. The subject of the eighth article is a report on a trip organised and undertaken by IAMO PhD students to Georgia, to acquaint themselves directly with the problems of agricultural development in this Caucasian country and discuss these with local experts. The final contribution provides a summary of the IAMO Forum 2015: "Agriculture and climate change in transition economies."



*IAMO's Directorate (from l. to r.): Prof. Dr Thomas Glauben, Dipl. Ökon. Hannelore Zerjeski, Prof. Dr Thomas Herzfeld, Prof. Dr Alfons Balmann*



*Migrants from Kosovo*



# Exodus from Kosovo: The factors causing people to leave

JUDITH MÖLLERS, ARJOLA ARAPI-GJINI, SHERIF XHEMA, THOMAS HERZFELD

## Introduction

In the winter of 2014-15 a large exodus from Kosovo began. At the time of writing, asylum seekers from Kosovo represent the third largest group in Germany, after applicants from Syria and Albania. Although the number of Kosovans arriving has reduced considerably since August, more than 600 people came from Kosovo alone in both August and September 2015, according to the Federal Office for Migration and Refugees. In the first half of 2015, more than 30,000 applications were made by Kosovans for asylum in Germany. The impact of this mass migration is being felt not only in Kosovo, but also in the countries of destination, who are currently having to cope with a large increase in numbers of asylum seekers overall. The arrival of so many Kosovans in Germany is prompting questions of what is triggering the migration and the potential consequences it might have. This article offers a snapshot of the driving forces behind this phenomenon and some of its particular features. A number of policy recommendations have already been outlined in IAMO Policy Brief 24, which appeared in summer 2015.

Although migration has a long tradition in Kosovo, it has always been a matter of necessity than one of choice. From rural areas especially, migrants have been sent away when their traditional livelihood base, the farm, could no longer secure the livelihood of the large traditional households. Long-term oppression and, ultimately, the Kosovo War led to a large number of refugees in the 1980s and 1990s. When the war ended in 1999 it looked as if the era of mass migration was over. Many Kosovans returned home full of hope for a better future. At the same time Germany, where most Kosovan migrants lived, ended its generous policy of toleration, thus closing the door to the migrants.<sup>1</sup> And yet emigration has increased again over the past few years. The exodus that began in autumn 2014 and reached its height at the start of 2015, probably represents the climax of this new wave of migration. Out of 1.8 million inhabitants,

<sup>1</sup> Toleration means that the migrant cannot be deported for a fixed period of time. Such permission of residency can be granted on grounds of, for example, illness or war in the person's home country. During the years of crisis many people from Kosovo and Serbia stayed for a long while in Germany thanks to this policy of toleration. Their status remained uncertain as the papers were only issued (repeatedly) for short periods.

as many as 100,000 Kosovans may have illegally crossed the EU borders in a very short period of time.

### **Aims and approach**

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Our research examines the background to this wave of migration and investigates the particular features of the phenomenon. Our study is based principally on seven expert interviews and thirteen interviews with migrants who applied for asylum in Karlsruhe in winter 2014-15. These interviews were carried out between March and May 2015. A comprehensive analysis of media reports on the subject was also undertaken.

### **What is driving the exodus from Kosovo?**

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We have identified three key factors causing and intensifying the migration. In first place is a high degree of frustration with politics. This is followed by the ongoing economic difficulties and the lack of prospects. The third factor is the interplay between a number of supporting factors that have led to an increase in migration.

*"It's the politicians who are forcing us to leave our country [...] Politicians should look after matters of state, but what are they doing instead? They're looking after the well-being of their family members by creating jobs for them even if they don't have a degree." (Migrant interviewed in Karlsruhe, Feb. 2015)*

The formation of the government coalition in 2014, which many Kosovans saw as proof of ruthless and corrupt

power politics, in which politicians did not shy from making a pact with their bitterest enemies for personal gain, provoked severe frustration and disappointment. And thus it was the political situation which in the end triggered the exodus. The migrants hold the politicians responsible for the highly politicised labour market, the widespread corruption and the absence of the rule of law. They also feel their future has been robbed by the politicians and those with power. But the EU is seen as accountable too; they accuse its Rule of Law Mission EULEX of being guilty of corruption too, and even of protecting high-ranking Kosovan government members from prosecution. There is, in fact, much evidence for the precarious condition of the state apparatus and poor governance. CAPUSSELA (2015) notes, for example, how the World Bank's Worldwide Governance Indicators have not shown any progress for Kosovo over the last few years, in contrast to most of the neighbouring Balkan countries.

*"There are eight of us in our family and none of us has any work. How are we supposed to survive? [...] What would you do if your family was starving?" (Migrant interviewed in Karlsruhe, Feb. 2015)*

*"The people here would rather die than go back to Kosovo. For the past fifteen years all we've heard is 'Wait, wait, wait,' and we have waited, but nothing's changed." (Migrant interviewed in Karlsruhe, Feb. 2015)*

A third of the population of Kosovo lives in poverty, a fact which certainly gives impetus to migration. But there is no indication that the economic situation in 2014 suffered a decline so severe that it might sufficiently explain

the wave of migration we are currently seeing. In fact, Kosovan GDP increased by 5 % on 2014 and wages rose too. Moreover, our interviews confirm that the majority of current migrants did not leave Kosovo because they were unemployed and in poverty, but because they'd lost hope that the country could change for the better. One of our experts, Alban Hashani, describes this as the "collective pessimism" of a nation whose patience has been overstretched and has nothing left to lose.

*"We Kosovans believe a lot and we hope even more."  
(Expert E. Gjokaj)*

The exodus was also intensified by a number of external factors. Although most migrants do not cite these factors as the decisive reason for their emigration, there is no doubt that they help explain the magnitude and timing of the wave of migration. A relaxation of travel conditions led to a substantial reduction in the costs of migration. In fact many migrants paid as little as a few hundred euros per person, which was only about 10-20 per cent of the usual price that used to be paid to smugglers. These sums were normally paid with borrowed money or from family savings or wealth. Until late summer 2015, the Serbian-Hungarian border was relatively permeable. Migrants had long been using this as an illegal entry-route into the EU. Two changes in the law, in particular, facilitated migration there (temporarily). To comply with EU legislation, in 2013 Hungary stopped detaining migrants who had been arrested. At the same time visa-free travel for Kosovans to Serbia has been in place since autumn

2014, which has allowed unimpeded transit to Hungary. The period in which migrants were generally able to cross Hungary to their countries of destination without appreciable problems only came to an end in summer 2015 when drastic measures were taken to secure the EU's external borders. In addition to a (temporarily) low level of travel barriers, false promises in the form of rumours were disseminated in the media and throughout social networks. Some experts have stated that a number of these rumours were circulated by smugglers and their accomplices, i.e. by those people who have profited directly from the wave of migration. One of these rumours, from the Ferizaj region, claimed that Germany would automatically grant asylum to all migrants arriving in February 2015. Together these factors produced a snowball effect, causing the wave of migration to surge in a short period of time. Not wanting to remain behind when everyone else was leaving, the hope-inducing rumours, as well as a lack of clear signals that these migrants were threatened with rapid expulsion from the EU, all made their contribution to the exodus.

### **Who are the migrants?**

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Typically, the migrants belong to the lower middle class – poor, but not from the poorest population groups. We estimate that around 60 per cent of the migrants arriving in Germany have a qualification on a par with a high school-leaver's certificate. In many cases the migrants left Kosovo spontaneously; often there were only a few days between their deciding to migrate and subsequent departure.

Although a considerable number of people have previous experience of migration to the EU, even some can speak German, a large number appear uninformed and naïve about what they can expect in the country of destination. Many migrants with previous experience of Germany had returned home to Kosovo after the war, often voluntarily and full of hope. Now they are leaving the country again. Disillusioned, they are coming back to Germany, hoping that they can resume their former lives here. Amongst them are a large number of young people who could be described as a "lost generation". They spent their childhood and/or adolescence in Germany and went to school there. Now they wish to return to Germany where they feel at home as, after going back, they were never able to integrate properly into a Kosovan society that was alien to them.

The majority of Kosovans arriving in Germany are classic migrants: unmarried young men who are willing and able to work. These young men desperately seek paid, secure work that they were unable to find in Kosovo. A more recent phenomenon is the considerable number of people who have left in a group or with their family. Not all are poor, but they are all turning their backs on the lack of prospects in Kosovo. Our expert Beqe Cufaj estimates that migrant families account for around 20 per cent of emigrants. Another expert, Alban Hashani, thinks it likely that even as many as 50 per cent of migrants have made the journey with their families. Finally, there is a smaller group of around 10 per cent of very poor people or those needing protection. These include older people

and those with health problems. They are hoping to find the necessary medical treatment and social support in Germany.

## Conclusion

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We have identified extensive government failure as the main trigger of mass migration. It is well known that corruption increases emigration trends and prevents people from returning, and thus it is closely tied in with migration (CARLING et al., 2015). Pent-up frustration about the political elite shamelessly getting richer at the expense of its citizens, widespread corruption, cronyism, but also a lack of prospects in Kosovo are now driving middle-class people and even entire families from the country. In Kosovo the chance to exploit the enthusiasm that accompanied the foundation of the state for sustainable political development was wasted. The wave of emigration could lead to a loss of up to 10 per cent of the population capable of work from Kosovo. Even if this migration brings short-term relief to the labour market, the fact that angry young people have lost hope and patience, and a large number of educated people have left the country is a very serious problem for Kosovo. Indeed, the migrants and experts who were interviewed agree that the alternatives to emigration would have been violent protest and social unrest. The exodus can thus be seen as a sort of revolt against the political system. The situation harbours social dynamite and the danger of an escalating crisis, especially if the destination countries quickly deport the migrants.



In spite of the tense situation at present, we are recommending to policymakers in the EU that they ought to adopt as relaxed an approach to the wave of migration as possible. Changes in asylum and visa regulations are advisable, but require a smart timetable. Legal migration opportunities – perhaps temporary ones – should be considered to avoid exacerbating an undesirable crisis situation in Kosovo, and also to relieve the burden on the asylum system. As political asylum is neither a desirable, nor – in the majority of cases – an acceptable form of migration for Kosovans, the EU should contemplate alternative, legal migration opportunities. According to our calculations, even the smallest prospect of a legal channel for immigration in the future, or access to the European visa programmes, would help curb the acute illegal immigration.<sup>2</sup>

*"I don't want anything from the [German] state. All I want is a work permit. If I can work I'll find my peace." (Migrant interviewed in Karlsruhe, Feb. 2015)*

Temporary, seasonal or circular labour migration could also be a suitable way of creating legal labour opportunities without burdening Kosovo with a massive exodus of skilled personnel. While there is no definitive proof that temporary or circular migration is a "triple win" policy tool for managed migration (benefiting the destination country, the migrant and the country of origin), it seems well-suited to the traditional migration patterns of Kosovo. In the country, poor households will benefit from

<sup>2</sup>The experts we interviewed from the International Organisation for Migration (IOM) agree that barriers to migration tend to increase illegal migration, thereby exposing those in most need of protection to greater danger.

remittances, and the labour market could be relieved to allow for substantial reform. For the host societies it is important to understand that yes, Kosovars desire access to the EU economic and social systems, but they want it through employment. In that sense, legal travel and migration opportunities are the better solution.

## Further literature

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Interviewte Experten: **Beqë Cufaj**, in Deutschland ansässiger kosovarischer Publizist, Journalist und Schriftsteller; **Jorge Baca-Vaughan**, Missionsleiter, IOM Pristina; **Magdalena Majkowska-Tomkin**, Missionsleiterin, IOM Budapest; **Besa Shahini**, Leitende Analystin, European Stability Initiative (ESI); **Ekrem Gjokaj**, Leiter der Abteilung Wirtschaftsanalyse und Agrarstatistik, Ministerium für Landwirtschaft, Forstwirtschaft und ländliche Entwicklung, Pristina, Kosovo; **Alban Hashani**, Forschungsdirektor, Riinvest Institute for Development Research, Pristina, Kosovo; **Agron Demi**, Geschäftsführender Direktor, Institute of Advanced Studies (GAP), Pristina, Kosovo.



Refugee reception centre, Karlsruhe

## Employment of migrants in eastern German agriculture

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MARTIN PETRICK, CHRISTA GOTTER, VASYL KVARTIUK, DIANA TRAIKOVA, BETTINA WIENER, SUSANNE WINGE

Declining birth rates, migration and changed career perceptions amongst young people mean that farms are finding it ever more difficult to replace retiring workers with skilled younger ones. This is particularly true of the agricultural sector in eastern Germany, traditionally characterised by wage labour. For this reason, a potential business strategy for many farms is hiring workers from abroad. Until now, almost all migrants employed in eastern German agriculture have worked exclusively as harvest hands. But immigrants, particularly those from Eastern Europe, represent a potential source of skilled labour. They will only find their way in eastern German agriculture, however, if employers and employment agencies provide them with specific information about their employment opportunities, offer them training in the form of language and specialist agricultural courses and set them up with integration mentors. The same is true with regard to the future employment of asylum seekers.

Over the last few years the removal of legal hurdles and a stable economy has increased the attraction of Germany as an immigration destination, for instance from Eastern and Southeastern Europe. Now, the most recent wave

of asylum seekers has brought another group of potential workers to public attention. Given this situation, our article will investigate the extent to which farmers have employed migrants in eastern German agriculture in the past and what jobs these migrants were allocated, and what value they now place on them given the strain on skilled labour. Using our own data collection in Bulgaria and Russia we will analyse the motivations and obstacles to Eastern European migrants finding employment in German agriculture. Finally, we will attempt a preliminary evaluation of the extent to which asylum seekers could provide a future labour force for German agriculture.

### **Saxony-Anhalt: Considerable shortfall in skilled agricultural workers by 2020**

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According to a current study by the Centre for Social Research in Halle (ZSH), 30 % of today's permanent agricultural workforce in the *Land* will have reached retirement age by 2020. That is almost 5,500 people (WINGE, 2015). The retirees can be divided into the following qualification groups: 21 % unskilled or semi-skilled permanent employees, 52 % skilled employees, 10 % foremen or

technicians and 17 % academics.<sup>1</sup> Thus young workers with medium and high-level qualifications are especially sought after.

It is unlikely that the current numbers of people in agricultural training will be able to compensate for those leaving. ZSH estimates that by 2020 almost twice as many workers will be leaving agriculture because of their age as those who will be completing agricultural qualifications. In 2014 only one in ten agricultural enterprises was training young employees; only one in four has such training places available at all.

Questioned about the strategies they are using to combat the impending shortage of skilled personnel, the farm managers said their main focus was on hiring people with non-agricultural qualifications (WINGE, 2015). But a considerable proportion of the farms are also considering foreign workers (Figure 1). Skilled foreign employees are already working in almost one in ten dairy farms.

### **Migrants predominantly used as harvest hands in the past**

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When it comes to migration for the purpose of employment, immigration law in Germany defines the most important groups as follows:

- Citizens of a Member State of the European Union (EU) enjoy free access to the German labour market. They can choose jobs freely and settle wherever

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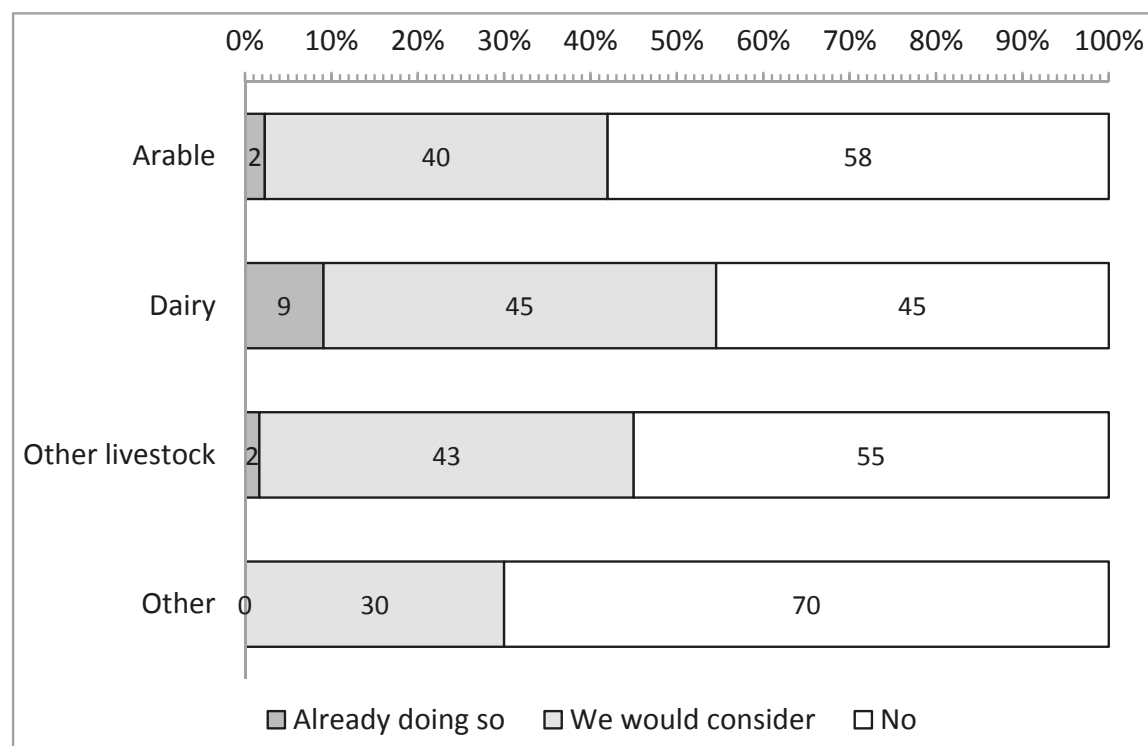
<sup>1</sup> Survey of 603 farm managers in Saxony-Anhalt, carried out by ZSH in 2014.

they like in national territory. The transition periods for the 2007 accession countries Bulgaria and Romania have now expired.

- Other foreign workers receive admission to the German labour market if their employment "has no negative impact on the labour market and there are no German workers available to take the job" (§39 para. 2 of the Residence Act). With the reform of German immigration legislation that came into force at the start of 2005, it is also recognised, however, that immigration should be oriented "to the requirements of the German economy", i.e. groups which are more attractive to labour market policy have easier access to the labour market. This includes simplified administrative decisions and the discontinuation of priority testing for select professional groups.
- In the past seasonal workers have represented a particularly important group for agriculture. Bilateral agreements with the countries of origin have allowed them to come to Germany on a temporary basis, regulated by narrow statutory provisions. As almost all these workers come from the new Member States of the EU, with complete freedom of movement their particular status has become obsolete.

Workers in Germany can be divided into employees liable for social security contributions (i.e. "regular" workers) and those in marginal employment ("mini jobs"), who are exempt from such contributions. The latter group includes low-paid workers whose monthly income consistently

**Figure 1: Percentage of foreign workers employed in agriculture. Answers given by farm managers in Saxony-Anhalt by main production area**



Source: ZSH farm survey Agriculture 2014 in Saxony-Anhalt. Farm numbers: 131 (arable), 66 (dairy), 60 (other livestock), 30 (other).

Notes: Foreign skilled workers without unskilled or semi-skilled seasonal workers. "Other livestock" includes all land-related animal production apart from dairy cattle..

does not exceed a maximum of 450 euros, as well as workers on short-term contracts, who are not employed for longer than two months or 50 days. Moreover, seasonal workers from Eastern Europe are often covered by the social security systems in their own countries and thus were put in a special category for statistical

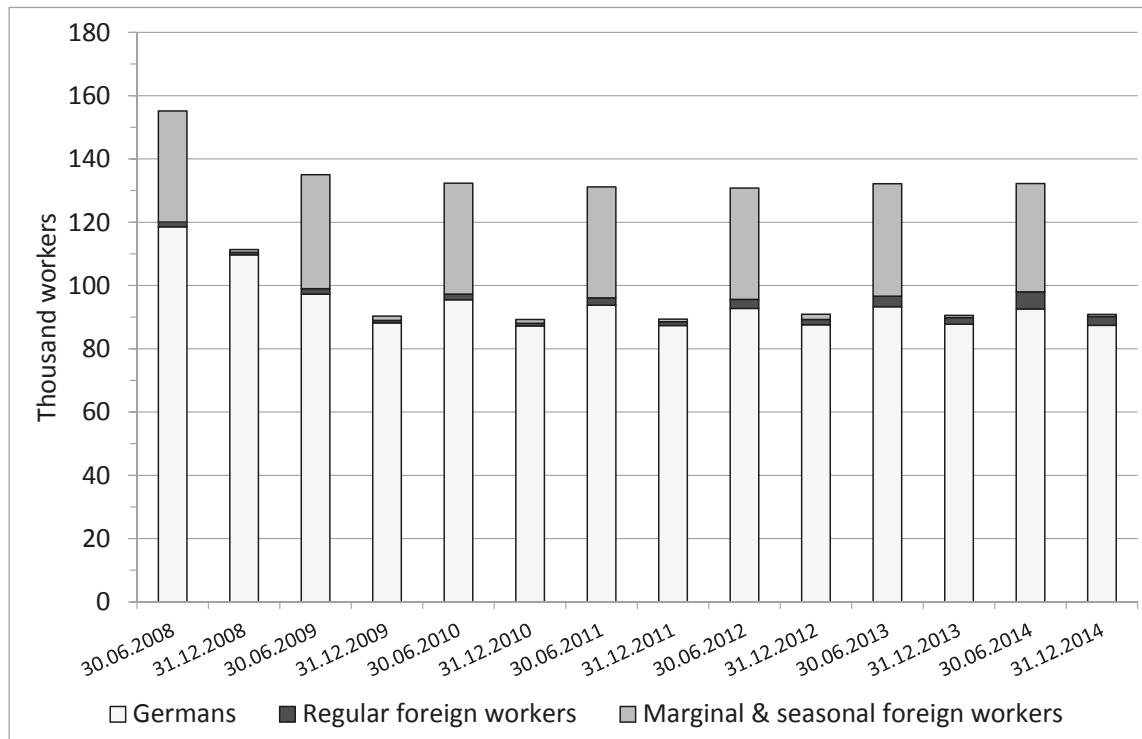
purposes until they gained absolute freedom of movement.

Up till now, farm managers in eastern Germany have made little use of the opportunity to employ foreigners as "regular" workers (Figure 2). The only significant group numerically are foreign seasonal workers. The

most important countries of origin for seasonal workers are Poland and Romania. Starting at a very low level in 2009, the numbers of foreigners in regular work roughly tripled, however, by summer 2014 to around 5,400. But according to figures from the Federal Employment Agency, the overwhelming majority of foreign workers liable

for social security contributions in eastern German agriculture work as assistants (77 per cent), around 20 per cent are employed as skilled workers and only 1 per cent are working as specialists and experts. The picture as far as German employees in eastern German agriculture is concerned is very different; only 20 per cent are employed

**Figure 2: German and foreign workers in agriculture in the five Länder of eastern Germany**



Source: IAMO calculation based on figures from the FEDERAL EMPLOYMENT AGENCY and the FEDERAL STATISTICAL OFFICE.

Note: "Germans" include family workers and non-family workers liable for social security contributions, as well as purely marginal workers ("ausschliesslich geringfügig beschäftigt"). "Regular workers" means those liable for social security contributions; "marginal and seasonal workers" means purely marginal workers plus an estimated figure for seasonal workers covered by social security systems in their home countries.

as assistants, 66 per cent as skilled workers and 6 per cent as experts.

### **Eastern Europe as a source of skilled agricultural workers**

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As part of the research project "Kompetenzmanagement zum Aufbau ausländischer Arbeitskräfte zu Fachkräften in der Landwirtschaft" (Competence Management to Promote Skilled Foreign Workers in Agriculture, Alfa Agrar) IAMO staff are analysing the conditions under which skilled workers from Bulgaria and Russia would take up employment in eastern German agriculture. Not only do both countries have long-standing traditions of migration to Germany, but their agricultural sectors, like that of eastern Germany, are characterised by large farms with wage labour.

According to our study, graduates from agricultural universities in these countries represent a potential target group for the future hiring of skilled workers in German agriculture. Young graduates not yet settled professionally or socially in their home countries were particularly interested in moving abroad as a career possibility. This was especially true of those who already had experience of travelling abroad for traineeships or holidays (KVARTIUK, 2015; TRAIKOVA, 2015). In Russia, graduates who are willing to emigrate typically come from the middle classes and study at agricultural universities in provincial cities, but not in Moscow or St Petersburg.

The greatest incentives for emigration include the differences in salaries and working conditions between

the home countries and Germany, poor social services in the home countries and thus a lower quality of life, as well as limited opportunities for career development due to widespread corruption, amongst other things. In general, the inclination to migrate appears less pronounced amongst skilled and young Russian workers than amongst their Bulgarian counterparts, partly due to the improvement in income prospects up till 2014 and the increasing prevalence of patriotic attitudes.

Favourable parameters could facilitate the migration of eastern European agricultural graduates. Information about job vacancies and the steps required to obtain a work permit should be accessible and clear. International traineeship programmes could serve as a platform for selecting and training potential skilled workers from Eastern Europe. Finally, German farms should be prepared to invest in language courses and other training programmes for foreign skilled workers, as well as in practical support for the move to Germany.

### **Employment of asylum seekers in agriculture**

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In view of the enormous rise in numbers of asylum seekers in Germany, it seems obvious to consider using this group for agricultural work too. Those whose applications are granted have direct access to the German labour market. Applicants whose asylum process is ongoing and those whose applications are refused, but whose deportation is suspended, are currently able to receive a permit to work after three months.



Till now there has been little reliable information about the qualifications and work experience of the asylum seekers in the latest wave of refugees. Sample tests of the asylum seekers carried out by the Federal Office for Migration and Refugees (BAMF) has shown that more than half of these have successfully completed secondary school, and more than 10 per cent have a university degree. Refugees from Syria are, on average, even better qualified. Very few, however, possess a sufficient knowledge of German.

In the most important countries of origin of asylum seekers, the proportion of those working in agriculture is considerably greater than in Germany. According to the latest available World Bank figures, 14 % of working people in Syria are employed in agriculture. In Iraq the figure is 23 %, in Albania 42 % and in Serbia 21 %. No figures exist for Afghanistan and Eritrea, although the numbers for structurally similar neighbouring countries – 44 % in Pakistan and 79 % in Ethiopia – suggest that a very large proportion of workers are employed in agriculture in these countries too. The equivalent figure for Germany is 1.5 %. The asylum seekers in Germany probably do not reflect these figures precisely, as they often come disproportionately from urban households. Moreover, agricultural production technology and the professional experience this allows may, in some cases, differ greatly between the countries of origin and Germany.

Other obstacles to a rapid integration into the agricultural labour market include poor knowledge of the language and limitations on mobility, which prevent them from visiting potential workplaces in rural areas.

Religious reasons will presumably prevent certain groups of migrants from being interested in livestock farming. In addition, the population of eastern Germany has more reservations about foreigners, especially Muslims, than Germany as a whole (BPB, 2013).

## Conclusion

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As the example of the *Land* of Saxony-Anhalt illustrates, by 2020 only around half of those retiring from agriculture will be replaced by those expected to complete agricultural training courses. Depending on the main line of production, between 30-54 % of farm managers in Saxony-Anhalt will consider plugging this gap with foreign workers, or are already doing so. And yet this strategy is no sure-fire success. The selection, recruitment, training and integration of foreign workers need manpower and incur costs. In addition, the populations of the traditional Eastern European countries of origin are also starting to shrink as a result of declining birth rates and aging. As far as this criterion is concerned, the group of asylum seekers has a more favourable structure. The choice of the correct strategy between training native workers and recruiting foreign ones needs careful consideration at the individual farm level. In both cases farms will have to invest in the training of their own workers. If neither approach leads to success, we can expect to see a further shift towards more capital- and land-intensive production. There would still be a need, however, for well-trained employees to carry out the jobs in arable farming, which is already highly technical, and in livestock farming, where mechanisation is



also advancing. The training of these skilled workers, which begins prior to working life, is a responsibility of the state too. Children and adolescents today coming from other countries must receive help to learn German and be integrated into the education system as quickly as possible. Another challenge of the future will be to reduce the number of pupils leaving school without qualifications, which is alarmingly high, particularly in eastern Germany, reaching 12 per cent in Mecklenburg-Western Pomerania (KRAMER, 2014).

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This publication was funded as part of the research project "Competence Management to Promote Skilled Foreign Workers in Agriculture" (Alfa Agrar) and the funding programme "Business competence management in demographic change" by the Federal Ministry of Education and Research (BMBF) ([www.alfa-agrar.de](http://www.alfa-agrar.de)). A slightly shortened version appeared in 2015 as an IAMO Policy Brief: [www.iamo.de/policybrief-25](http://www.iamo.de/policybrief-25).



*Rabenstein, a village in Bohemia*

# The key functions of local civil society organisations in Czech rural communities: An empirical study

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JARMILA CURTISS, SIMONA ŠKARABELOVÁ

## Introduction

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While the communist past of countries in Central and Eastern Europe has had lasting effects on the composition of the third sector, as well as on its roles and functions within societies (SALAMON and SOKOLOWSKI, 2004; BERNHARD and KAJA, 2012), the political and societal expectations of the sector have markedly grown. This development was given particular impetus by EU accession. Fiscal decentralisation as well as EU regional and rural development policy designs that have shifted the focus from government to governance have called for civil society organisations (CSOs) to safeguard democratic governance and locally targeted development. However, little has been learned about the true capacities of, and conditions for, the third sector to carry out these roles.

This paper aims to reduce this knowledge gap by analysing CSOs in rural areas. Rural communities represent environments that generate unique demands on third sector engagement. These communities have been affected by modern developments such as diminishing local employment opportunities, an aging population,

or growing geographic disparities in quality of life that have created needs for CSOs' proactive engagement not only as partners in local governance but also as providers of services and community-builders.

The concrete objectives of this paper are to explore local CSOs' contributions to rural societies and to identify factors and conditions that enhance their operation and societal impact. Aside from validating the relevance of factors that other empirical studies deem important for the impact of CSOs, our aim is to analyse the effect of various aspects of rurality. We chose the Czech Republic, an EU country with transition experience, as the case study for our analysis.

## Functions of CSOs

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To form a comparative basis with other empirical studies undertaken on Czech CSOs, we adopted the triangle model of CSOs' functions developed by NEUMAYR et al. (2009), which focuses on CSOs' service, advocacy and community-building functions. The *service function* refers to CSOs' provision of goods or services for which there is a demand that neither the state nor for-profit

organisations are willing to fulfil, or the provision of which has been delegated to them by the state (BEN-NER A VAN HOOMISSEN, 2007).

The *community-building function* is commonly referred to as the social capital role of CBOs, following the concept of PUTNAM (1993). This function refers to the unifying role of CSOs within a community, i.e. integrating individuals into their social environment and allying groups based on certain issues or their shared locality (KENDALL, 2003; SALAMON et al., 2000). CSOs encourage social interaction creating trust, common norms and reciprocity, all of which generate a sense of community (NEUMAYR et al., 2009; DONOGHUE, 2002).

*Advocacy* refers to CSOs' influence on and participation in political discussion, decision-making, and execution (Jenkins, 1987). CSOs utilise various forms of advocacy, including formal legislature consultations and executive processes, informal lobbying, and public relations campaigns directed at mobilising communities or influencing public opinion.

## Data

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This study used a primary research approach to obtain information about the local third sector in rural municipalities in the Czech Republic, based on structured face-to-face interviews from 2013 with mayors or vice mayors of municipalities selected primarily from two regions of

the Czech Republic: Vysočina and South Moravia (see CURTISS and ŠKARABELOVÁ, 2014 for detailed information about the survey design). The questionnaire was also designed to obtain information about local amenities, social capital in the community, qualitative information on local government and public administration, as well as local governance mechanisms. The obtained database was complemented by municipality-level statistics from the Czech Statistical office. The final database consists of information on 179 municipalities.

## Methods of measuring and analysing the societal impact of CSOs

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As well as investigating the size of the local CSOs and their fields of activity, we utilised a constant sum question to comparatively weight the CSOs' three core functions: service provision, community-building and interest representation (advocacy). The impact of advocacy and community-building was further intercepted by subjective rating-scale questions, from which we derived composite measures (see Table 1). These composite measures were then analysed using a Tobit regression model as explanatory variables, in conjunction with a number of selected explanatory variables to identify factors limiting and/or enhancing CSOs' societal impact. To reduce the number of explanatory variables we undertook a principle component analysis prior to the regression analyses.

**Table 1: Mayors/vice mayors' subjective weighting of CSOs' community-building and advocacy impact**

Statements approximating CSOs' community-building function	Mean	Std. dev.	Min.	Max.
Local CSOs have an overall positive contribution to the development of the community.	4.61	0.69	1	5
Members of local CSOs are more willing to volunteer than non-members.	4.04	1.01	1	5
Members of local CSOs participate more actively in social life of the municipality than non-members.	4.24	0.90	1	5
Integration of younger people into CSO activities increases their belonging and improves their relationship to the community.	4.42	0.87	1	5
<b>Composite variable for CBOs' community-building impact</b>	<b>4.33</b>	<b>0.67</b>	<b>1</b>	<b>5</b>
Statements approximating CSOs' advocacy function	Mean	Std. dev.	Min.	Max.
Local CSOs facilitate and spread positive societal values (e.g., in the area of environmental protection, cultural heritage, rural traditions).	4.42	0.83	1	5
Local CSOs help municipal government become better informed regarding residents' needs.	3.86	1.07	1	5
CSO representatives have approached local government with their own initiatives and proposals.	3.59	1.15	1	5
CSO has actively observed plans and decisions of the municipal government (e.g. through participation in municipal board meetings).	3.64	1.05	1	5
<b>Composite variable for CBOs' advocacy impact</b>	<b>3.94</b>	<b>0.73</b>	<b>1</b>	<b>5</b>

Notes: Applied scale: 1 = disagree to 5 = agree.

### The size of the rural third sector and service provision

Based on the survey statistics, there are, on average, four CSOs per municipality and 1 CSO per 100 residents. This latter figure varies from no CSO to 3.8 CSOs per 100 residents. The local CSOs are predominantly small organisations with, on average, 36 members. These organisations are engaged mainly in sports, hobby and other leisure activities such as gardening, fishing

or beekeeping (37 % of all CSOs). Volunteer fire departments and hunters' associations, which have a long history in Czech rural areas, comprise 24 % and 9 % of all CSOs, respectively. CSOs active in culture and those maintaining traditional activities represent 12 % of rural CSOs. However, organisations engaged in social affairs, education, health care or rural development are rare. The mayors of the municipalities questioned in our study stated that the greatest gap in demand is for CSO

or third-sector nonprofit services in the fields of care for the elderly and disabled, support for entrepreneurial activities, and education for adults and the elderly. This suggests that the services in rural areas with the poorest provision are those that require larger amounts of financial and human capital.

### **Service provision relative to community-building and advocacy**

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Survey results indicate that 45 % of the overall impact of CSOs in the rural communities (which is considered to be 100 %) is on average accounted for by service provision and 46 % by community-building. In the view of the mayors, the advocacy function of rural CSOs is significantly smaller; it was assessed to represent only 9 % of their overall impact. When compared to similar research of the relative importance of Czech (rural and urban) CSOs' functions conducted by NEUMAYR et al. (2009), which assessed advocacy to be 22 %, our results indicate that the advocacy role of rural CSOs is substantially weaker.

The weak advocacy function of Czech CSOs suggests that relations between the third sector and the state are probably still affected by the legacy of the communist past, associated with society's distrust towards political parties (see HYÁNEK and POSPÍŠIL, 2007). Furthermore, HYÁNEK and POSPÍŠIL (2007) assert that the state authorities still lack a culture of engaging CSOs in political processes. In rural areas characterised by small communities, the distance between community members and local

government representatives is, however, significantly smaller. This could suggest stronger informal ties and the possibility of community members' direct influence over local leadership, thus reducing the necessity of formal advocacy activity by CSOs.

The strong community-building function of local CSOs, on the other hand, could be explained by the relatively weak position of CSOs in Czech society and communities. According to HYÁNEK and POSPÍŠIL (2007), CSOs are not well established and embedded in their communities, and have to invest a considerable amount of resources in establishing and securing their position in their communities and in society at large. Therefore, the CSOs need to make great efforts in community-building (NEUMAYR et al., 2009).

### **Factors enhancing community-building and advocacy**

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Our empirical results support CHINNOCK and SALAMON'S (2002) findings that relations with government are of major significance for the CSOs' societal impact (Table 2). Concretely, the transparency of local government (PC9) measured by the existence of internal regulations for information sharing on budget proposals and municipalities' financial management increases the advocacy as well as community-building of local CSOs. CSOs' advocacy is furthermore found to be substantially facilitated by local government policies of more actively engaging CSOs and the public in political processes (PC7).

**Table 2: Tobit analyses of the determinants of the local CSOs' community-building and advocacy impact**

	CSOs' community-building impact		CSOs' advocacy impact	
	Coefficient	P-value	Coefficient	P-value
Constant	4.759***	0.000	4.276***	0.000
PC1: Community size and amenities	0.206**	0.016	0.126*	0.077
PC2: Municipality's financial endowment	0.034	0.570	0.036	0.487
PC3: Social capital (proclivity to volunteering)	-	-	0.252***	0.000
PC4: Remoteness, religion and proportion of people born in commune	0.188***	0.004	0.069	0.210
PC5: Population growth and rejuvenation	0.072	0.244	0.020	0.705
PC6: Rurality (agriculture and dispersion)	-0.148**	0.032	-0.055	0.352
PC7: Engagement of public in the political process	-0.055	0.377	0.181***	0.001
PC8: Social cohesion (good relationships)	-	-	0.020	0.709
PC9: Transparent/open local government	0.138**	0.037	0.154***	0.006
PC10: Risk of free riding	-	-	0.135**	0.013
PC11: Extreme remoteness (high unemployment)	0.119*	0.062	0.126**	0.022
PC12: Productive population	0.204***	0.002	0.134**	0.015
PC13: Human capital	0.154**	0.018	0.047	0.371
Number of CSOs in the community	-0.063*	0.090	-0.074**	0.020
Proportion of CSOs established after 1989	0.141	0.558	0.211	0.306
Municipal financial support to local CSOs	-0.008*	0.093	-0.004	0.301
No. observations	151		152	
Prob > chi2	0.001		0.000	
Pseudo R2	0.098		0.150	

Note: PC stands for principal component; \*, \*\*, \*\*\* Indicate statistical significance at 10 %, 5 % and 1 % significance level.

Our findings show that CSO functions are encouraged and facilitated by the availability of local infrastructural and cultural amenities such as public gas lines, schools, medical facilities, cultural centres, shops or churches (PC1).

The study further reveals that the proportion of inhabitants of working age, combined with the PC-literate population, has a significant positive impact on both community-building and advocacy. The composite





*Official opening of the Chapel of Saint Jan Nepomuk in Zderaz, Czech Republic, renovated thanks to an initiative of the Zderaz civil society organisation.*



effect of the proportion of people with higher formal education and proportion of freelancers is found to be positive and significant only for the CSOs' community-building function.

Variables that depict social capital (PC3) and the risk of free riding on public investments (PC10), both analysed only in the context of CSOs' advocacy levels, were found to have a statistically significant positive impact. Good relationships among community members (PC8) were found to be insufficient to increase CSOs' advocacy efforts.

Furthermore, greater remoteness combined with a larger proportion of religious inhabitants and people born in the community (PC4) significantly increases the CSOs' contribution to the community. A community's remoteness has also a positive effect on CSOs' community-building function when interlinked with lack of job opportunities (PC11). These socio-geographic community characteristics also significantly contribute to CSOs' advocacy function. On the other hand, the rurality variable composed of greater geographic community dispersion (larger number of municipality parts), smaller population density, and a larger proportion of people employed in agriculture (PC6) has a statistically significant negative effect on CSOs' contribution to community-building.

## Conclusion

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Our analysis of primary data from the Czech Republic indicates considerable limitations on local third sector

organisations. Their service provision is focused mainly on leisure activities and traditional services such as the volunteer fire service, i.e. spheres of activity that demand lower financial and human resources. The provision of social, educational, or health care services requiring greater professionalisation is found to be rare. This observation points to constraints on the provision of not-for-profit services that are specific to rural areas. While service provision is found by other authors to be CSOs' most important function, we conclude that rural CSOs expend just as much effort in community-building. Nevertheless, their advocacy function, which is crucial for effective participation in local governance, was revealed to be weak.

The study, however, has identified several factors that have an enhancing effect on the advocacy function of local CBOs. Amongst these are mechanisms of good governance – transparency of local government and mechanisms providing greater opportunities for CSOs' political participation. Local amenities and better developed infrastructure also encourage CSOs to engage in local governance. Furthermore, higher levels of human and social capital in the communities contribute to greater advocacy efforts. The CSOs' community-building function that coproduces social capital is found to be greater in more religious communities with a higher proportion of locally born inhabitants, while a higher proportion of those employed in agriculture, combined with a greater geographic dispersion of the community, reduce the CSOs' community-building level.

The large difference between rural communes, therefore, in the importance of the third sector and its societal



*Traditional May celebration in Jesenice, a village in the Czech Republic*

impact, mainly reflects the local supply capacities and political/governance opportunities. This may greatly challenge cohesive rural development and have substantial policy implications, as policies where support for development is conditional on the active participation of the local third sector may benefit more prosperous rural communities than communities with greater need of support for development.

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## How much climate change can Ukrainian wheat production tolerate?

FRIEDRICH J. KOCH, ANNE JUNGANDREAS, FLORIAN SCHIERHORN, DANIEL MÜLLER

Ukraine enjoys excellent natural conditions for agriculture, primarily due to the fertile black earth covering more than half of the country. 41.8 of the 60.4 million hectares in Ukraine are used for agriculture, 32.5 million of them for arable farming, the rest as pasture or hay fields. Agricultural production still lies way behind its potential, however. In addition to the problems caused by the current conflict in the Donbass region, reasons for this include poor infrastructure, widespread corruption and a land market which is still subject to strict regulations that impede investment. For example, the sale of land is still prohibited. There is also a lack of qualified workers in agriculture; younger people continue to be attracted to the cities. In spite of these problems, Ukraine is a major global producer of agricultural raw materials.

Between 2009 and 2014 Ukraine's share of global wheat production stood at 3 %. With annual exports of 4 to 13 million tonnes of wheat between 2008 and 2011, Ukraine was the seventh to ninth largest wheat exporter (FAOSTAT, 2015). Despite favourable natural conditions, Ukrainian wheat yields between 2009 and 2013 only came to around half of those in the EU, and 38 % of German yields (Figure 2). Not least for this

reason, the actors broadly agree that Ukrainian agriculture has great potential to increase its production.

### The risks of climate change

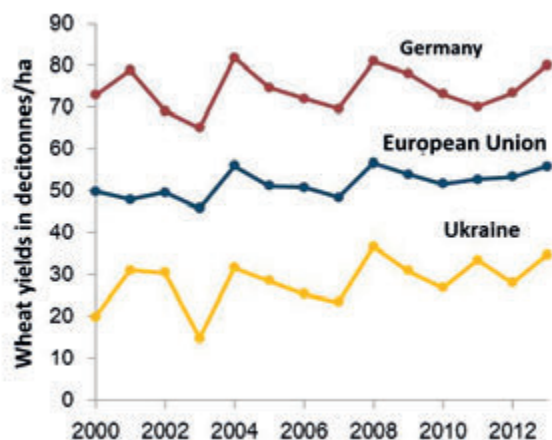
Global dynamics, however, could spoil this prospect. As the most recent Assessment Report by the Intergovernmental Panel on Climate Change (IPCC, 2013) states, climate change continues to accelerate. At the same time the global community still finds it hard to produce a consistent response to this problem. It is highly likely that climate change will have massive and, in many regions, negative effects on wheat yields. The most recent studies suggest that average global wheat yields might fall by 6 % for each degree of warming, as well as exhibiting increased temporal and geographical fluctuations (ASSENG et al., 2014). Although it is conceivable that this might have a positive side – average yields could be increased by developing new areas of arable land especially in Russia's northern provinces (LIOUBIMTSEVA et al., 2013) – it is highly probable that Ukraine, as well as the Black Earth areas in southern Russia and northern Kazakhstan, will have to deal with the negative effects of climate change.



***Figure 1: Roads in rural areas are generally in a very poor state, leading to higher maintenance and fuel costs, as well as time-wasting. The hillsides on the horizon are pale, a sign of major soil erosion, which is often a result of unsuitable farming methods.***



**Figure 2: Comparison of wheat yields between 2000 and 2013**



To obtain a better understanding of the regional aspects of the threats of climate change to agricultural production, it is important to consider local natural conditions. Ukraine can be roughly divided into three large agro-climactic zones. In the north is the Polesian Lowland, which accounts for 19 % of Ukraine's total area. Polesia has relatively poor wetland soils, warm and humid summers, cold winters, high precipitation, and plays a minor role in wheat production. In the south, the dry steppe has very good soils, but relatively low rainfall, often with long dry periods during the summer. Wheat is cultivated on a large scale in these areas. In between is the forest steppe, which offers the best conditions for high yields. Characteristic of the forest steppe are large-scale, deep black soils, high summer temperatures and, in good years, sufficient rainfall. Covering 33 %

of Ukraine's territory, this zone is of great importance to Ukrainian arable farming. Overall, the further south one goes, precipitation falls and temperatures increase. There is also a slight decline in rainfall as one moves from west to east. The wheat yields vary according to the local agro-climactic conditions (Figure 4).

If we look at the development of individual climate parameters for the whole of Ukraine since 1970, we can see a clear trend towards higher temperatures and declining precipitation (HAYLOCK et al., 2008, E-OBS DATASET; Figure 5). The pronounced seasonal fluctuations are also clearly visible. These fluctuations have a substantial impact on agricultural production.

Forecasts from the most recent IPCC report (2013) suggest a distinct annual temperature rise which, depending on the model and scenario, will be between 1.5 and 5 °C by 2100, while average rainfall trends may remain constant.

Particularly during the key period for arable farming, between April and September, the temperature rise may even reach 7 °C, with a drop in average precipitation of up to 20 %. Also, fewer rainfall events per season are expected.

These forecasts show clear threats to Ukrainian agriculture. Particular attention should be paid to the high-yielding forest steppe zone, where the annual precipitation of 350-400 mm is already at the lower limit of the water requirement for wheat.

## Dataset

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To assess the implications that the expected climate dynamics might have for agricultural production in Ukraine, we need a better understanding of the impact of dominant climate variables in the recent past. This will allow us to see, for example, whether the change in one variable (e.g. temperature) is relevant for crop growth.

In our study we examined spatially differentiated climate data for five growth periods of winter wheat. We looked at solar radiation as the net energy source and precipitation, as well as two climatic "mixed variables": evapotranspiration and a drought stress index.

We can also turn to farm data from the Ukrainian Agribusiness Club (UCAB), which was recorded annually between 2005 and 2012. From the farm dataset we extracted levels of nitrogen fertilisation as well as annual yields of winter wheat. To combine the spatially differentiated climate data with the isolated farm data we georeferenced the farm data using the farm addresses, land-use maps and farm sizes. The result is the first spatially resolved dataset at farm level for the whole of Ukraine, based on data relating to more than 10,000 farms.

### Impact of climate parameters on wheat yields

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To determine the statistical relations between climatic parameters and wheat yields we chose the statistical classification process "Random Forests", which is based

on decision trees (BREIMANN, 2001). This model from the field of machine learning is particularly apt for the analysis of large datasets and for detecting non-linear relations.

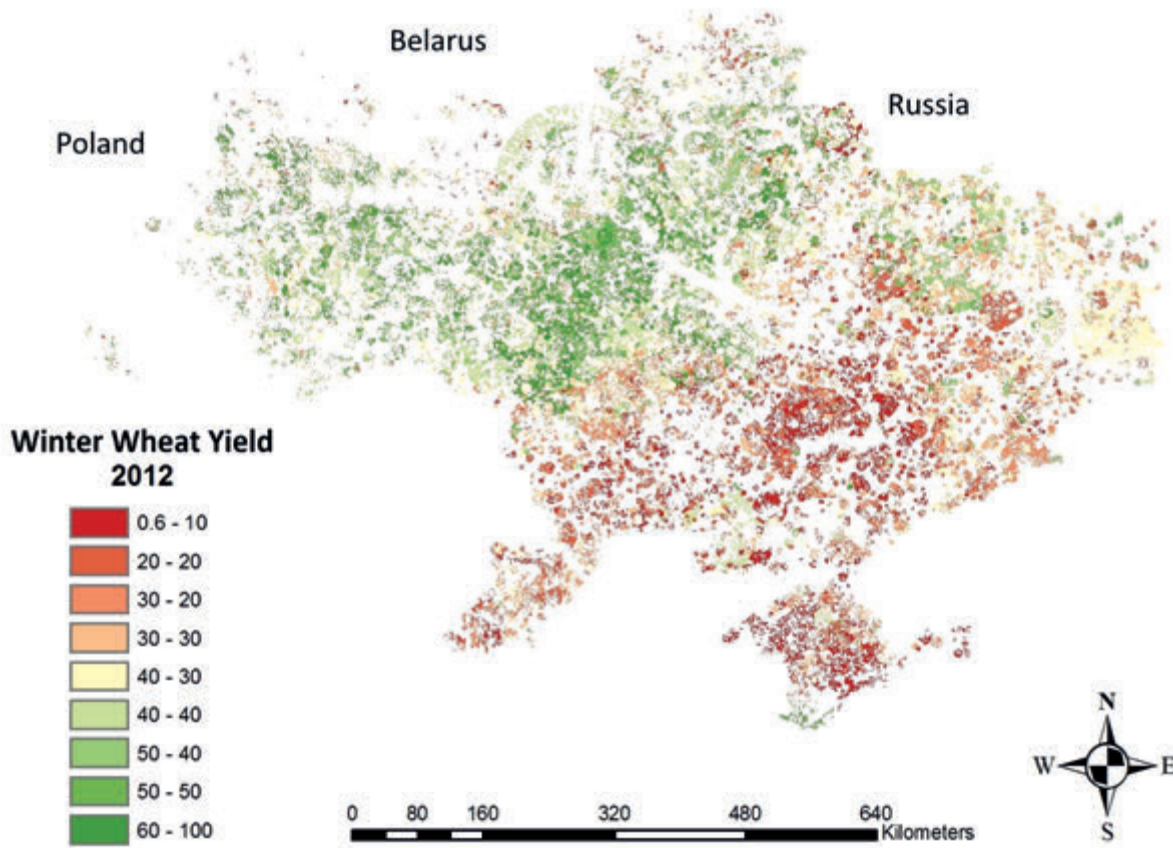
The findings of the Random Forest approach explained 74 % of the variance of the reported yields. The model could also depict the entire variation of the reported yields, meaning that our assertions would also be valid for particularly low and high yields. The analysis of the impact of individual factors revealed, as expected, that the application of nitrogen had a substantial influence on wheat yields. This is hardly surprising given that the use of fertilisers shows much greater variability between farms over the years than weather factors.

We also measured the impact of individual variables on the accuracy of the model. This model sensitivity indicates by how many per cent the accuracy would drop if the corresponding variable was removed from the model. Nitrogen fertilisation attains an "impact factor" of just under 60 %, followed by evaporation (25-35 %, depending on the growth period) and solar radiation (15-20 %). At 10-15 %, the roles of precipitation and drought are not so important (Figure 6). Evaporation reflects the interplay between water availability and solar radiation. A favourable combination of these two factors has a greater influence on the yield than just a positive manifestation of one of these factors. Although Ukrainian agriculture regularly records substantial losses because of severe drought, we cannot make a statement about this particular relation because the period



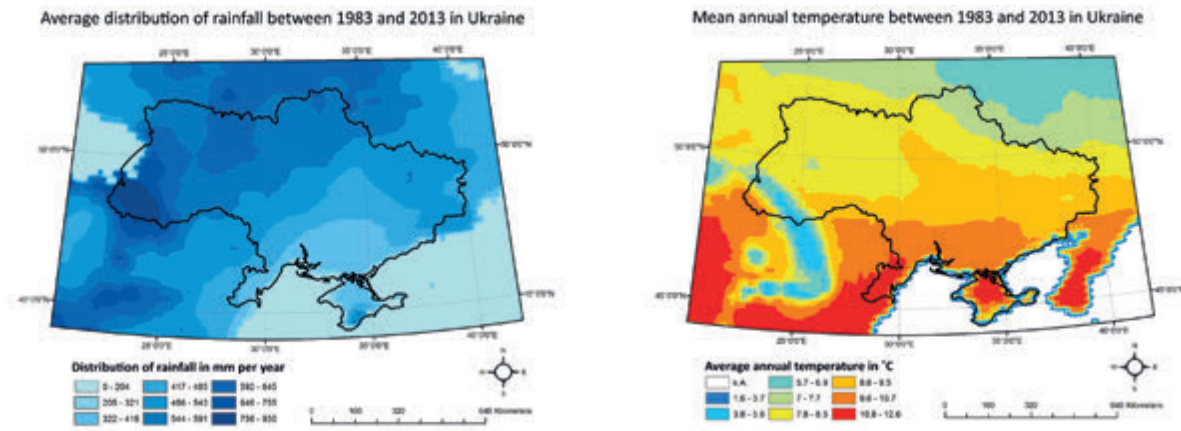
**Figure 3: Breakdown of winter wheat yields in 2012**

Although the influence of local climactic conditions can be clearly seen, there are also large deviations in yields within locations with similar natural conditions. These deviations are of particular significance for understanding the factors besides natural suitability that impact yields.

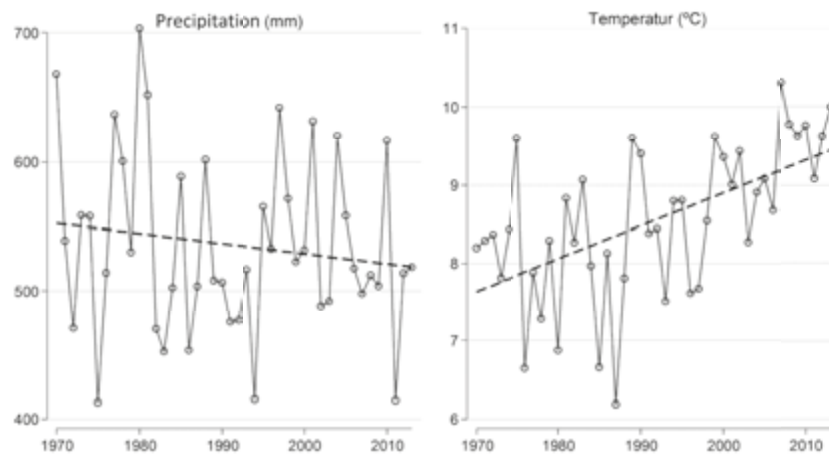


Source: Farm data from the UKRAINIAN AGRIBUSINESS CLUB (UCAB), georeferenced by the authors.

**Figure 4: Climate in Ukraine. Temperature and rainfall illustrate the north-south gradients, which is also reflected in yields**



**Figure 5: Average annual rainfall and temperatures from 1970 to 2012 with a linear trend line**

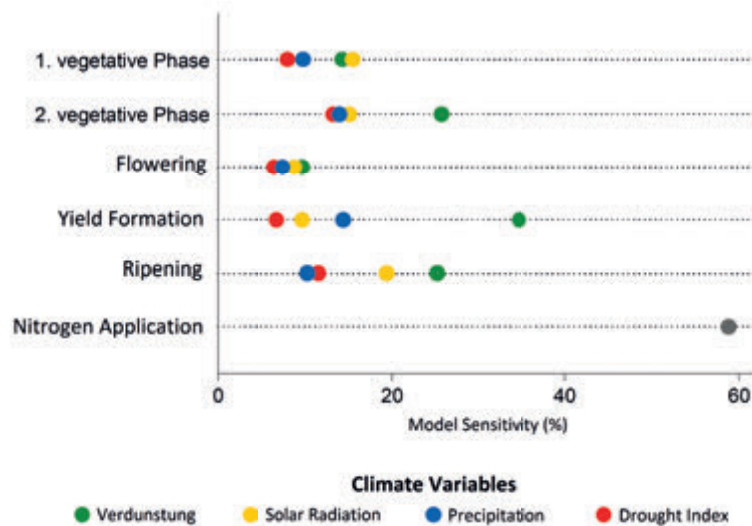


Source: E-OBS dataset HARLOCK et al., 2008.

under study is too short (2005-12). Our dataset is not sufficient to evaluate the threat posed by the potentially higher frequency of drought periods. Nevertheless, declining rainfall and rising temperatures indicate yield losses as a result of drought stress, especially in the summer months, and thus in all likelihood higher yield losses if the Intergovernmental Panel's forecasts prove correct. More attention needs to be paid to the impact of weather during the various growth periods. Periods with increased water and energy requirements, such as the vegetative phase in the spring, are more susceptible to changes in climate, as one might expect. And so yields in the vegetative phase react with greater sensitivity to climactic changes.

The findings of our study also allow us to infer the extent to which climactic factors can change without effecting substantial yield losses. Until the volume of rainfall drops by around a half, there is a negative linear relation between rainfall and yield. If rainfall drops by 50 % or more, no appreciable harvest can be expected, whereas a reduction of 20 % will already result in substantial losses. As the temperature rises, so does its impact on the yield. With a rise of up to around 1 °C, this can have a positive effect to begin with, but above that the effect is negative. Our findings also show that nitrogen fertilisation, as the most important variable impacting yields, no longer has a positive effect above a certain amount. This threshold is, on average, 200 kg

**Figure 6: Impact of nitrogen fertilisation and various climate variables during different growth phases on the yield levels of winter wheat (see text for explanation)**



of nitrogen per hectare per year, which is in the region of the typical recommended amounts. Of course these figures are subject to regional fluctuations corresponding to local conditions and systems of cultivation.

### **How much climate change can Ukrainian wheat tolerate?**

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Ukrainian agriculture is expected to respond very sensitively to fluctuations in climate. The high-yielding regions are already recording low average levels of rainfall with occasionally very high summer temperatures. In the steppe region, where climactic conditions mean that, even historically, only extensive agriculture has been worthwhile, there is the danger that rainfall will drop below a critical threshold that makes profitable arable farming impossible. Although shifting arable farming to the high-precipitation north would be possible climactically, the soils there are less fertile and need higher applications of fertilisers.

The currently high-yielding forest steppe could be climactically comparable to the steppe now if climate parameters change as forecast by the IPCC in its current scenarios of what is most probable. Our study shows that yields in the forest steppe could decline considerably. If we consider the structural changes that would accompany such dynamics, we must assume that a crisis is looming for large sections of Ukrainian agriculture. According to the subjective views of many Ukrainian farmers, the climate fluctuations of the recent past have already negatively impacted their production. On a research trip in May 2015, we discussed this topic

with many farmers in different regions. It became very clear that interest in climate change and its potential consequences for agriculture had grown. Concerned questions were put especially by farmers from the central and southern regions of the country. They see themselves powerless in the face of this impending problem, and are asking how they can respond commercially and by using agricultural technology. Besides measures to reduce global greenhouse gas emissions, it is therefore sensible and crucial to make greater investment into plant breeding and advice relating to adaptation to climate change, in order to develop varieties as early as possible, which are resistant to the expected fluctuations in climate. Such measures would help better prepare farmers locally for the future, as for the time being climate change is progressing inexorably.

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# The impact of climate change on Russian grain production: Assessing the benefits and damage. Which will prevail in the medium and long-term?

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MARIA BELYAEVA, RAUSHAN BOKUSHEVA

## Introduction

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Accumulating evidence suggests that increases in greenhouse gas emissions will change the global climate and increase the frequency of extreme weather events. Agriculture is one of the economic activities expected to be most likely and significantly affected by climate change (FISHER et al., 2012; SCHLENKER and ROBERTS, 2009). Successful and effective adaptation to climate change requires knowledge of the mechanisms and the magnitude of its impact, as well as information about the ability and potential capacity of economic agents to adjust to changes in their environment.

In our study we examine the potential impact of climate change on Russian grain production. Russia is one of the most important grain producing nations and since 2000 has become a major grain exporter. During the period 2011–13, Russia exported an annual average of 23 million tonnes of grain (LIEFERT and LIEFERT, 2015). Considering the country's substantial role in world food production, climate-induced changes in agricultural productivity in Russia could have serious consequences

for the global food supply and world food prices. From 1976 to 2013 Russia's average annual temperature increased at a rate of 0.43 °C per decade, twice as much as the global rate (ROSHYDROMET, 2014). These temperature increases might be beneficial to areas in northern Russia that are not entirely suitable for agricultural production under the current climate. At the same time, however, they might have a damaging effect on agricultural productivity in the most important grain-producing regions situated in the south of the country. On many levels, therefore, Russia represents an interesting case study for analysing the impact of climate change on agricultural productivity.

This study brings up to date projections of the impact of climate change on Russian grain production using the most recent yield and weather data for single subjects of the Russian Federation, and employing a panel fixed effect model approach. We also include time trends specific to economic regions. Finally and most importantly, we elaborate on the recent advances in the modelling of yield-weather relationships accounting for the potentially damaging effects of extreme temperatures (SCHLENKER and ROBERTS, 2009).



## Data

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Our analysis looks at 77 subjects of the Russian Federation (autonomous republics, krais, and oblasts), using agricultural data for three major grain crops in Russia – winter wheat, spring wheat, and spring barley – over the period 1955-2012, as reported by the Russian Federation Federal Statistics Service (ROSSTAT 1992-2014; TsSU 1956-91). The weather variables were derived using the Global dataset of meteorological forces with 1.0° grid resolution compiled by SHEFFIELD, GOTETI, and WOOD (2006). Using information about the distribution of areas of grain cultivation across and within each oblast (BONTEMPS et al., 2010), we derived spatially weighted average, maximum, and minimum daily temperatures and precipitation levels for each of the selected periods of crop vegetation. We then used these data to construct variables that account for changes in weather conditions throughout the observed period.

Climate change forecasts were derived from the 4<sup>th</sup> Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2007). We used the climate model developed by the Hadley Centre for Climate Prediction and Research to forecast average monthly temperatures for three emissions scenarios, which represent different assumptions of development paths, such as economic, technological or demographic changes. These, in turn, result in different levels of greenhouse gas emissions in the atmosphere (IPCC, 2007). For each scenario we chose the 20-year average values of temperatures for

the short (2011-30), medium (2045-65), and long term (2080-99). For the sake of simplicity, we refer to only one scenario of climate change (A2), which assumes that the development of the global economy continues to be business-as-usual. As far as climate change is concerned, this results in a very heterogeneous and fragmented world with temperature changes varying between 2.0 and 5.4 °C.

## Findings

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We used a regression analysis of historical data to trace the relationship between past yields and weather conditions. Empirical results exhibit a statistically significant sensitivity of grain crops to climate variables. Our calculations indicate a positive response to an increasing length of the growing period, expressed in a higher number of growing degree days. The coefficient estimates are of about the same magnitude for all three crops.

The accumulated temperature during the growing period of spring grains is considerably higher than that for winter grains, suggesting that spring grains are more vulnerable to even a small increase in extreme temperatures. In all cases, however, the coefficient relating to days of extreme heat is negative, indicating that extreme weather conditions in the form of heat waves might considerably reduce grain productivity in Russia. In other words, significant yield losses are likely to occur when daily temperatures exceed 25 °C. In the case of winter wheat this impact is less pronounced than that for spring grains. This result can be explained by the

fact that the yield formation for winter wheat is by and large complete by the end of June, which makes it less vulnerable to extreme temperatures in mid-summer. The probability of daily temperatures exceeding the 25 °C threshold is considerably higher for spring wheat and spring barley since a larger part of their vegetation period (phenological phases such as tillering, heading, earing and grain formation) takes place in June and July.

In addition to accumulated temperatures, we considered daily average autumn and winter temperatures to check for climate impact between the planting date and the date when winter grains come into ear. According to our calculations, winter wheat yields show a concave response to daily average temperatures in autumn, indicating a positive impact of a warmer climate during the planting period, but suggesting that extremely warm temperatures are likely to affect the development of the crop negatively and thus reduce yields. The same is true of winter temperatures – warmer winters do not necessarily lead to better growing conditions for the winter wheat, potentially resulting in yield losses.

Most of the grain fields in Russia are rain fed. Therefore, the response of grain crop yields to summer precipitation is positive. As expected, the value of the summer precipitation coefficient is fairly high for spring wheat, indicating that it is the most sensitive plant and higher levels of soil moisture significantly increase yields. The opposite is the case for the winter period during which winter wheat is planted. Although rainfall in autumn increases plant productivity, excessive winter precipitation might equally damage the crop.

An increase in grain yields results from changes in temperatures and precipitation, as well as from technological progress and adaptation to the changing environment. Future yields, therefore, depend on a specific combination of climate projections, an estimated impact of technological progress, and a modelled crop response. The projected impact of climate on 3 grain types is depicted in Figure 1. Most of the studies reviewed for this paper forecast significant yield reductions for spring grains in short-, medium-, and long-term projections. The most dramatic change in productivity is found for spring wheat. According to our projections, its yield might fall by 4 % in the short-term scenario, by 18 % in the medium term, and up to 43 % in the long term. These results are in line with findings of previous studies that have analysed the impact of climate change on Russian agriculture. Spring barley is similarly expected to have lower productivity but, unlike spring wheat, it is not subject to such drastic changes. Our study identifies a reduction of up to 2 % in the short term, by 12 % in the medium term, and up to 34 % in the long term.

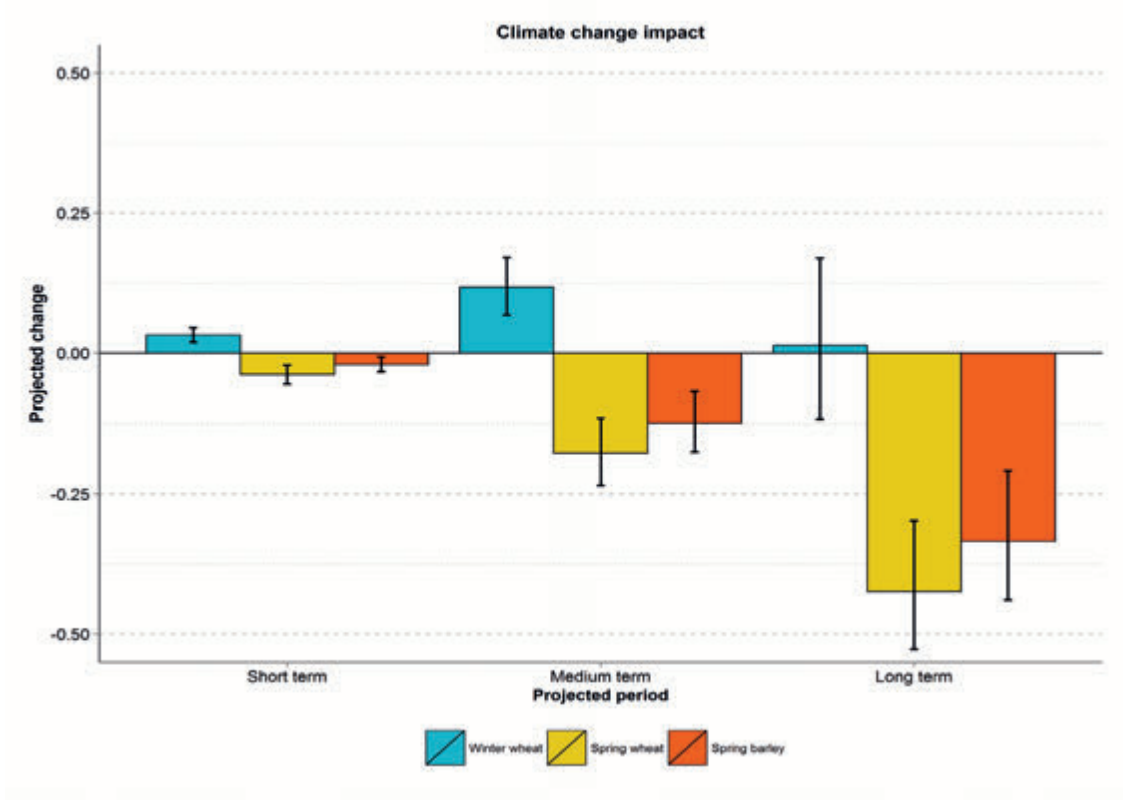
By contrast, we find a positive short-, medium-, and long-term impact of global warming on winter wheat yields. This comes as no surprise, taking into account our calculations, which suggest that winter wheat is likely to benefit from increasing temperatures, expressed in a longer growing period not interrupted by sudden extreme heat waves. Our analysis indicates that winter wheat yields could increase by 3 % in the short term and by 12 % in the medium term. The impact of climate

change in the long-term is vague and can vary from -12 % to +16 % reflecting the high level of uncertainty when it comes to such a long-term forecast.

The projected effects are not only crop specific, they also vary across oblasts, thus shedding further light on changes in agricultural productivity in the country. Figure 2 shows the spatial distribution of the projected impact of climate change at oblast level in the short, medium, and long term. A detailed examination of the

effect of climate change on grain yields at oblast level shows that, where there is an absence of adaptation measures, agricultural productivity could exhibit a dramatic decline in the most productive regions in Russia. A key solution to mitigating the effect of climate change on agricultural production for most of the Russian regions would be to switch from spring to winter grains. A warmer and drier climate during the growing season of spring grains in the southern regions of Russia

**Figure 1: Predicted impact of climate change under HadCM3 for A2 climate change scenario**



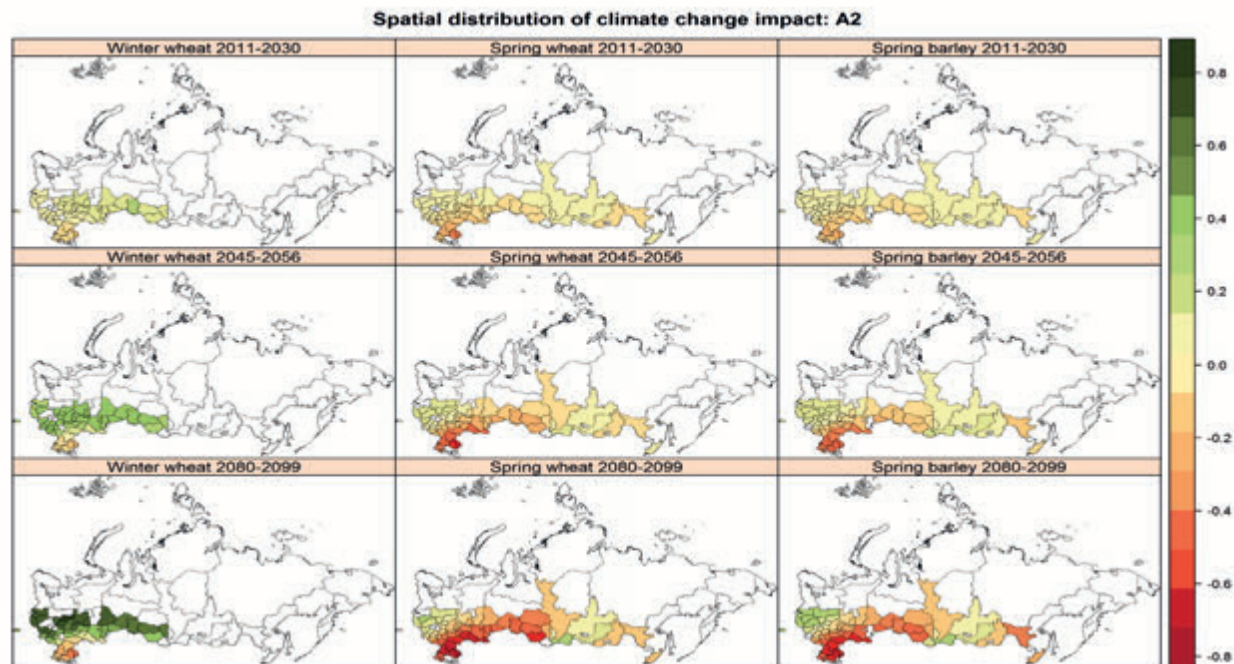
will threaten the harvest of these crops, while similar weather trends in growing period of winter grains (March-June) will create suitable conditions for increasing the productivity of winter wheat.

## Conclusions

A changing climate and an increasing frequency of extreme weather events result in bad harvests, which translate into food shortages and price fluctuations. Prior information regarding the magnitude of the potential impact of climate change on agricultural

productivity is essential in order to undertake efficient adaptation measures. Our study has investigated the potential impact of climate change on agricultural productivity in Russia – one of the major grain producers in the world. Historical changes in temperatures have already altered the growing period grain needs for maturation, and future changes in climate could transform the production processes. Russian grain production predominantly relies upon three types of grain: winter wheat, spring wheat, and spring barley. Winter grains have earlier planting and growing seasons than spring grains, therefore they can be planted in regions with

**Figure 2: Predicted impact of climate change under HadCM3 for A2 climate change scenario at oblast level**



a warmer climate. Milder winters would allow more successful crop development. Our estimations suggest that the changing climate and increasing temperatures will have a positive effect on winter wheat productivity. This is explained by the growing period of the winter wheat crop: temperature increases in early spring create favourable, non-harmful conditions for full maturation of the crop. By contrast, it is forecast that the productivity of spring grains (wheat and barley) will see a constant decrease in the short and medium terms. Such projections indicate the benefits of switching to winter crops as more temperature-resilient and productive crops.

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# Russian pork import ban – Trade diversion and high food prices

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IVAN DJURIC, LINDE GÖTZ, THOMAS GLAUBEN<sup>1</sup>

## Introduction

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After Western countries implemented economic sanctions against Russia on July 31 2014, the Russian government announced on 6 August 2014 an import ban on most foods and agricultural products from the European Union (EU), the United States of America (USA), Norway, Canada and Australia. Restrictions on agricultural imports had started even earlier, however, in January 2014, when Russia imposed a ban on the import of pork originating in the EU.

Russia is one of the world's largest food importers and thus is of great importance to the global food trade. Russia actually imports more than 50% of its foods: notably meat, fruit, vegetables, fish and dairy products. The import value in 2013 was well above 40 billion USD.

Russia, which takes around 13% of EU agricultural exports (just under 16 billion USD), is the European food industry's second most important sales market. Russian imports also account for a not insignificant proportion of global trade in with products such as frozen beef, fruit and butter (up to 15%).

In relation to pork exports to Russia, several cases of African swine fever (ASF) were detected in wild boar at the Lithuanian and Polish border with Belarus. In response Russia imposed a ban on the import of pork originating in the EU in January 2014. As a result, EU pork exports to Russia stopped altogether. Denmark and Germany were among the biggest EU pork exporters to Russia, accounting for almost 27% of total Russian pork imports in 2013. On the other hand, other non-EU trading partners of Russia (i.e. Brazil, Canada and USA) took the opportunity to increase their pork exports under the pre-defined quota.

## Russian pork import ban

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Russia's imports of pork are quantitatively limited within a tariff rate quota (TRQ). Exporters are obliged to register

<sup>1</sup> This study is part of the projects AGRICISTRADe ([www.agricistrade.eu](http://www.agricistrade.eu)), GERUKA ([www.iamode.de/geruka](http://www.iamode.de/geruka)), and MATRACC ([www.iamode.de/matracc](http://www.iamode.de/matracc)). The authors gratefully acknowledge financial support from the European Commission (7<sup>th</sup> Framework Programme), the German Federal Ministry of Food and Agriculture (BMEL) via the German Federal Office for Agriculture and Food (BLE), and the Volkswagen Foundation.

and apply for licences which are allocated to specific countries by the Russian Ministry of Industry and Trade. For example, prior to 2014, EU exporters could export up to 365,000 tonnes of pork to Russia.

When Russia joined the WTO in 2012, import tariffs were reduced significantly. For example, the in-quota import tariff for live pigs was reduced from 40% to 5% in 2013. In 2014, the tariff was lifted altogether. At the same time the out-of-quota tariff was reduced from an average of 68.3% to 65%. The average quota for pork imports amounted to 453,300 tonnes per year in the period 2011-13. In 2014, the import quota for pork was reduced to 430,000 tonnes, without any specific quotas for the different exporting countries.

Prior to the import sanctions on pig meat in January 2014, the EU was the main pork exporter to Russia. Besides the EU, other principal pork exporters were Brazil, Canada, Chile and USA, accounting for 38% of Russia's total pork imports in 2013.

The first major trade diversion came in the wake of the tensions between Western countries and Russia over the escalating conflict in Ukraine. The first measure impacting the import of pig meat in Russia was the Russian import ban imposed on EU live pigs, pork, and pork products at the end of January 2014. Right after the ban, EU Member States implemented veterinary and sanitary measures in order to ensure that meat imported to Russia satisfied the necessary sanitary conditions.

Trade relations between the EU and Russia continued to worsen as the Ukraine conflict progressed. In August 2014

Russia imposed a one-year import ban on selected agricultural products from countries that had imposed economic sanctions on Russia in March 2014 (USDA, 2014). Besides the EU, imports of selected agricultural products were also banned from USA, Canada, Australia and Norway. This second ban, however, did not have any further impact on the EU pork market, because the export of meat had already ceased in February. In the meantime, between the first ban in January and the second in August, EU pork exporters redirected their shipments towards Asian markets. In fact, the impact of the second ban should be felt most strongly in Canada and USA, because they took over the market share of EU exporters after the ban in January 2014 (US MEAT EXPORT FEDERATION, 2014). The second import ban was certainly beneficial to Brazil, Chile, Serbia, Belarus, and Kazakhstan because they could significantly increase their exports to Russia in order to satisfy the import demand.

### **The effects of the pork import ban**

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After the Russian government imposed the ban on pork imports, total imports decreased by 14% (about 4,500 tonnes). In the short term, imports of pork were switched from EU trade partners to already existing trade partners outside the EU, such as Brazil, Canada, Chile, USA and Serbia. At this time, Russia's partners in the Customs Union (Belarus and Kazakhstan) did not increase their pork exports to Russia. The non-EU trading partners exploited the increase in their import



**Table 1: Number of companies licensed for pork imports to Russia for selected countries**

Country	until 2014	Additional number of enterprises		Total
		January-August 2014	After August 2014	
Canada	27	+5	+4	36
USA	169	+9	+1	179
Brazil	3	+5	+20	28
Chile	2	+4	+3	9
Serbia	3	+1	+3	7

Sources: *RUSSIAN FEDERAL SERVICE FOR VETERINARY and PHYTOSANITARY SURVEILLANCE.*

quotas to the full; their share in overall Russian pork imports grew (Figure 1). Significant increases in imports from non-EU countries can also be seen by the number of the additional companies that obtained import licences in 2014 (Table 1).

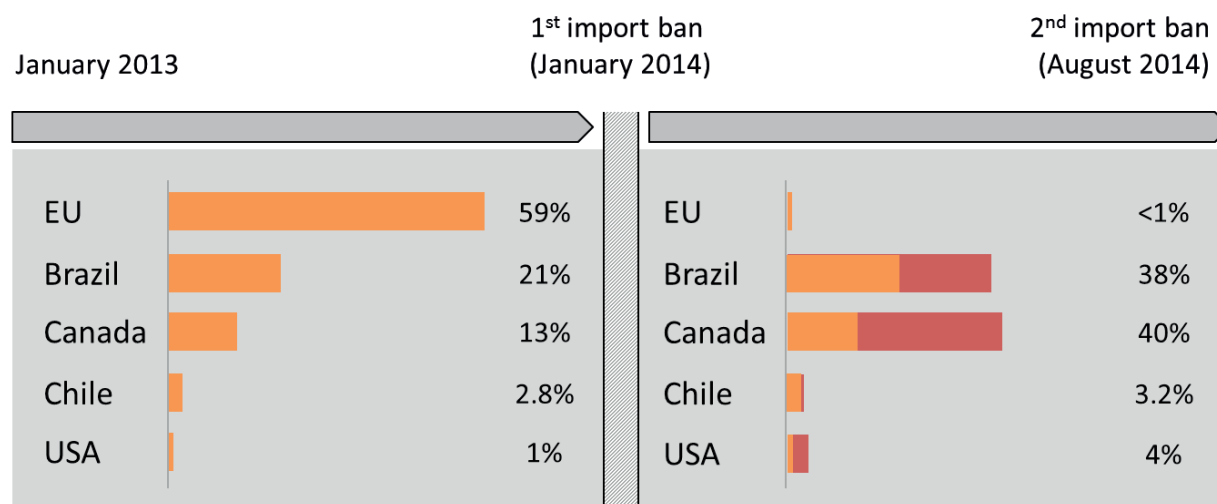
The considerable increase in trade volumes helped reduce trade costs between Russia and Brazil, Canada and USA. The transmission of price changes from these three countries to the Russian domestic market also improved significantly, in Brazil's case reaching almost perfect transmission. At the same time, the margin between the wholesale and end consumer pork prices in Russia increased, while the transmission of price changes decreased by 10%. This indicates that retailers might rely less on wholesale price changes when setting end consumer pork prices.

Right after the implementation of the import ban in January 2014, EU pork prices started to fall compared

with the rest of the world. In Denmark, for example, the price for pork carcass fell by 3% within two weeks after the implementation of the Russian ban, reaching its lowest level of 1.34 EUR/kg in March 2014. Germany saw a slightly higher price decrease of 6%, reaching a three-year minimum of 1.45 EUR/kg for pork carcass at the end of February 2014. In the second half of March 2014, pork prices started to rise in all EU countries as a consequence of increased export activity towards Asian markets (e.g. Taiwan, Philippines, South Korea, and Japan), and because traders were able to store the non-exported pork.

As for the impact on domestic prices in Russia, end consumer pork prices did not change immediately after the ban, but continued decreasing until April 2014. The real effect of the ban first became apparent in April 2014 when pork started to become scarce on the domestic market. As a result, end consumer meat prices increased by 18% until June 2014 (Figure 2).

**Figure 1: Share of pork imports to Russia by selected trade partners**



Source: UN COMTRADE, own depiction.

### Summary and conclusion

During the course of the Ukraine crisis, agricultural trade between Russia and its main Western trading partners decreased sharply. Agricultural trade between the EU and Russia had already started to decrease in January 2014 when Russia imposed an import ban on all pork products. The second import ban imposed in August 2014 did not only apply to pork, but a large number of agricultural products. Besides the EU, the second import ban also applied to USA, Canada, Australia and Norway.

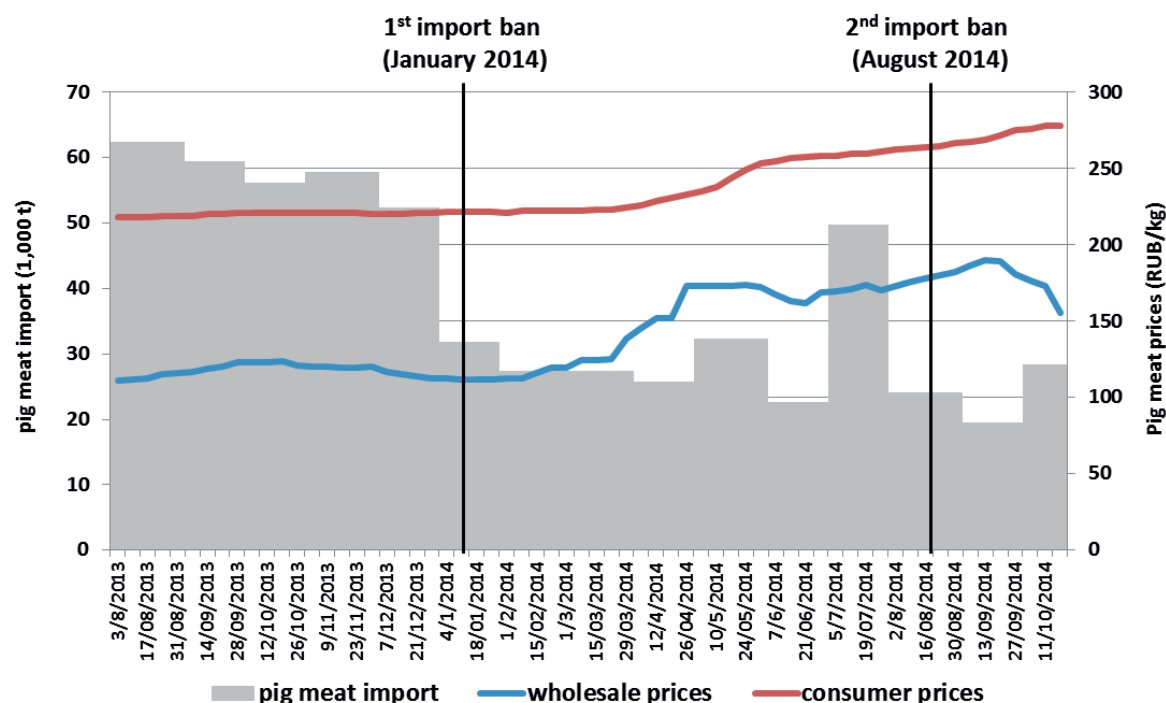
After EU pork exports to Russia ceased in January 2014, Russia's existing non-EU trading partners (i.e. Brazil,

Canada, and USA) managed to increase their exports to Russia. Significant increases in volumes of pork exported to Russia, coming from Brazil, Canada, and USA, helped reduce the transaction costs in the pork trade between these three countries and Russia. In actual fact, fluctuations in Brazilian pork prices were transmitted almost completely to the domestic wholesale pork prices in Russia. By contrast, the transmission of variations in Russian domestic wholesale pork prices to end consumer pork prices was reduced, reflecting the fact that domestic retail pork prices were set more independently from domestic wholesale prices. Faced with a supply shortage, domestic end consumer pork prices in Russia started to increase sharply on a weekly basis.

All in all, our findings highlight the Russian ban on pork imports from the EU had only short-term, almost immediate price effects on the domestic markets of the main trading partners. In the medium term, however, domestic markets managed to adjust and thus stabilise domestic prices. By contrast, faced with significant shortages on the domestic market, end consumer pork prices in Russia increased significantly. The main problem is finding reliable trade partners who are able to offer good quality pork at reasonable prices once the main trading

partners are out of the market. Russian consumers lose by paying high prices for meat products. On the other hand, domestic pig producers gain from the import ban. Besides the increase in pork producer prices, pork producers have received large subsidies from the Russian government under the import substitution programme (State Support Programme for the Development of Agriculture of the Russian Federation 2013-20), where the livestock sector is assigned a high level of political priority (DJURIC and GÖTZ, 2015). With regard to meat and

**Figure 2: Domestic pork prices in Russia (August 2013–August 2014)**



Source: ROSSTAT and UN COMTRADE, own depiction.



*Meat stall in a market hall in Kaliningrad, Russia*

meat products the aim is to increase self-sufficiency to about 88%. To achieve this aim the Russian government has extended its existing programme to support agricultural development amounting to some US\$ 46 billion by an additional US\$ 11 billion to substitute imports of agricultural products and foods with domestic production. In the long run, the domestic effects of the import ban will greatly depend on the duration of the ban and Russia's ability to secure a sufficient domestic supply (GLAUBEN, 2014).

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*My new glasses have finally arrived!*

# Eyeglasses and success at school: The case of rural China

YANJIE ZHANG, THOMAS GLAUBEN, MICHAEL KOPSIDIS

## Background

Studies supported by the World Bank and the World Health Organization suggest that approximately 10 per cent to 15 per cent of all children aged 8 to 12 in developing countries have problems related to poor vision. Over 90 per cent of these eye problems are caused by refractive error, and in most cases they can be corrected with properly fitted, quality eyeglasses. Studies show, however, that many children with refractive error in developing countries do not have or wear glasses, and some of them have never even been examined (CONGDON et al., 2008; YI et al., 2015). Based on the results of a recent REAP study, highlighting that more than 20 per cent of the children are nearsighted, the situation appears to be even worse in rural areas and migrant communities of China compared to other countries. Myopia (nearsightedness), which causes difficulty in seeing distant objects, is very common in school-aged children and is responsible for more than 90 per cent of children's poor vision; over 60 per cent of rural children with refraction problems do not have glasses (CONGDON et al., 2008).

## Why do many nearsighted children not wear eyeglasses?

Given that so many nearsighted children in rural areas and migrant communities in China do not wear or have glasses, we must ask why this is the case. There are many possible explanations for this puzzlingly low level of uptake, including poverty, lack of knowledge about myopia, and misinformation. The main reason is probably poverty. Especially for those families in deep poverty, of which there is a substantial proportion in remote rural areas and some migrant communities, a pair of glasses for the child may be far beyond the household budget.

Why do families with sufficient disposable income, however, not buy glasses for their children? Here it may be a case of misinformation and lack of knowledge about myopia. Children and their parents may be unaware that they cannot see clearly (the children may simply think the world is blurry). A commonly held but mistaken view in China is that wearing glasses is harmful to children's vision, causing it to deteriorate faster. Many children, parents and teachers believe that eye exercises



(a series of self-applied massages around eyes) protect vision and slow the progression of myopia, which is better than wearing glasses. Other misconceptions persist, including that primary school students are too young to wear glasses, and that there is no need to wear glasses if the problem of poor vision is not severe.

Unfortunately, little current empirical evidence or reliable data sets exist that could be used to analyse problems of children's vision in China, or the impact of poor vision on their academic performance and mental health. Given the prevalence of uncorrected vision among children, we need a better understanding of the correlates and potential consequences of myopia among rural and migrant children. This is particularly true if the effects of addressing vision problems are comparable to other, more costly educational interventions such as teacher training, scholarships, computer assisted learning, or reduced class sizes.

### **The REAP vision care project in China**

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Since 2012 the Rural Education Action Program (REAP)<sup>1</sup> has been carrying out the largest empirical vision-care project ever conducted in China. With the generous support of Stiftung Auge, IAMO has been an active participant in the project. The goals of the study are:

<sup>1</sup> The Rural Education Action Program (REAP) is an impact evaluation organisation that aims to inform sound education, health and nutrition policy in China. REAP's goal is to help students from vulnerable communities in China enhance their human capital and overcome obstacles to education so that they can escape poverty and better contribute to China's developing economy. More about REAP can be found at: <http://reap.fsi.stanford.edu/>.

- Measuring the prevalence of poor eyesight in rural and migrant areas of China.
- Measuring the impact of poor eyesight on education.
- Determining effective ways to get students to acquire and wear glasses.
- Developing strategies for policymakers to bring vision care into the national health care agenda.

To date, REAP has carried out two studies of randomised control trials. One study was undertaken in rural northwest China (Gansu and Shaanxi provinces), and the other in Shanghai-Suzhou urban and suburban areas, which are home to large migrant communities.

For both studies, primary schools were randomly selected in rural areas or migrant communities. Within each school one class was randomly selected in each of the fourth and fifth grades. A questionnaire compiled information on students and their family characteristics. Children were also given standardised maths exams, tests to measure their psychological wellbeing, and a visual acuity assessment at the beginning and end of the project.

Eligible children were chosen at random by the school to receive different interventions including free glasses, vouchers, an education campaign, and incentives for teachers to encourage children to wear glasses. During the project, each school was revisited without notice and the numbers of glasses-wearers was calculated for each school.

**Figure 1: The REAP vision-care project in China in figures**

### **Vision care for rural children**

- **19,977** fourth and fifth grade students screened
- **252** primary schools
- **178** towns
- **18** counties
- **4,000** pairs of glasses distributed

### **Vision care for migrant children**

- **4,408** fifth grade students screened
- **94** migrant primary schools
- **11** districts with large migrant populations in Shanghai and Suzhou
- **967** pairs of glasses distributed

Overall (Figure 1), 19,977 grade four and grade five students in 252 primary schools in northwest China and 4,408 grade five students in 94 migrant primary schools in Shanghai-Suzhou urban and suburban areas were screened, and a total of 4,967 pairs of glasses had been dispensed by the end of the two studies.

### **Lessons learned so far**

#### ***Uncorrected vision is prevalent among rural and migrant children in China.***

24.3 per cent of the children in the vision-care project for rural children failed visual acuity screening, which means that nearly one out of four students in grades four and five has poor eyesight. The proportion is slightly higher in the vision-care project for migrant children (around 28 per cent). Although there is a relatively easy

way of correcting refraction errors by wearing properly fitted glasses, only a small share of children did so. In both studies, only 4 per cent of the children reported having glasses. Some observers claim that migrant children will be more likely to acquire a pair of glasses when their families move from villages to cities. However, our data on the prevalence of uncorrected vision does not support this theory. Glasses ownership amongst migrant children is even slightly lower than that of rural children – about one in seven children in migrant communities that needs glasses actually has them; by contrast, the rate is one-sixth in rural areas.

#### ***Wearing glasses can improve children's educational performance and self-confidence.***

Mathematics test scores were chosen to measure children's academic achievement because it provides direct evidence of children's cognitive skills, and the effect of

learning at home is relatively insignificant compared to classroom learning. Separate maths tests were administered at the beginning and end of the project; results show that the simple act of wearing glasses raises a nearsighted child's test scores by an average of 14 points. A further study of the effect of three interventions suggests that dispensing free glasses at school has a greater impact on children's educational performance than the other two interventions of providing vouchers or an education campaign. A mental health test is designed to assess children's psychological well-being, particularly their anxiety levels. Preliminary results show that poor vision negatively affects children's mental health and those nearsighted children become more self-confident after they have worn a pair of properly fitted eyeglasses for a period.

***Wearing glasses is not harmful to children's vision and eye exercises do not slow down the onset or progression of myopia.***

Many nearsighted children do not use glasses even after they or their parents realise they are myopic. Besides poverty, misinformation about wearing glasses is another reason preventing children from wearing them. Previous investigations indicate that many children, parents and teachers believe that wearing glasses hurts children's eyes and causes their vision to deteriorate faster. Our analysis clearly confirms that this is by no means the case; rather, wearing glasses significantly contributes to slowing the progression of nearsightedness. Free glasses were provided to nearsighted children with an

average visual acuity of 0.3 (normal vision acuity = 1.0) at the beginning of the project. After a period of nine months, on average, the nearsighted children who regularly wore their glasses experienced a visual acuity decline of 5 per cent; in comparison, those who did not wear their glasses regularly experienced a more severe visual acuity decline of 10 per cent. Furthermore, a common misconception among most people in China is that eye exercises protect vision and slow the progression of myopia. Results from the project show that there are no significant differences in myopia progression between the group of children who performed eye exercises regularly and the group who did not. Although they may partly relax one's eyes, eye exercises cannot actually solve the problem of myopia.

***Providing teachers with incentives to encourage children to wear glasses will improve rates of glasses-wearing.***

Earlier vision-care studies revealed that nearly half of nearsighted children (with the backing of adults) chose not to wear glasses even when they knew they had a problem with their eyesight. This is a key obstacle to developing a model for publicly funded vision care. Observational data suggests that one of the main ways that might improve rates of glasses-wearing is teachers encouraging children (explicitly or by example) to wear glasses because teachers are key figures in the day-to-day lives of children. An incentive mechanism has thus been designed whereby teachers are rewarded if they encourage their nearsighted students to seek vision care. During the project period, each school was visited

three times without notice and the number of near-sighted children wearing glasses was counted secretly. So far the results are encouraging: teachers encouraging students to wear glasses makes a huge difference. Usage rates in the teacher incentive group reached 81 per cent, which is 28 percentage points higher than the group with no teacher incentives.

### **One step forward: To develop a model for the provision and uptake of vision care**

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Thus far, REAP has had great success and important lessons have been learned. More than 20,000 children in different parts of China have been screened and about 5,000 pairs of glasses have been dispensed to those who are nearsighted. At the same time, REAP has been able to put together a comprehensive picture of vision care for rural and migrant children in China. The results from the project have shown that: (1) Uncorrected vision is pervasive and damaging for children, and warrants swift action, (2) Glasses are a safe and effective treatment for vision problems among children, (3) Eye exercises are not effective for correcting children's vision problems, (4) Subsidised eye care is an important driver of uptake, and finally (5) Vision screening at school can be carried out effectively by teachers locally.

The successful project found that, despite the high prevalence of uncorrected vision in rural areas and migrant communities of China, access to vision care is limited. The data showed that China's methods of screening

and treating vision problems require radical revision. The Chinese government needs a model for vision-care screening and treatment to implement throughout the country. To this end, REAP seeks to create two model vision-care counties in Gansu and Shaanxi Provinces, the experiences of which will allow similar programmes to be set up in the rest of China. Using each of the major lessons that have been learned from the project, the goal is to provide vision care to every child in grade 4 to grade 6 in the county's poor rural schools to improve their performance at school.

Vision Centres (VC) have set up within the county hospital of the selected counties. Staff at VCs are trained as certified refractionists and opticians. The VC staff then train local teachers how to screen primary school children. Those students who do not pass the screening will be referred to the respective Vision Centre. Finally, the VC staff examine each child and dispense glasses to those who require correction. So far the VCs have been running well to ensure that high quality screening, refraction, and glasses reach all children who need them.

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*Learning with glasses*

# Visions of the future for rural areas in Georgia: A report on the 2014 PhD study visit

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## Introduction

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From 22 to 16 September 2014 a group of IAMO PhD students made a five-day study visit to Georgia. The purpose of the trip was to obtain a deeper understanding of the key aspects of Georgia's agricultural and rural development as a transition economy. The idea for the visit and the detailed programme were worked out by the PhD students in close cooperation with the Agricultural Policy Research Centre of the International School of Economics at Tbilisi State University (ISET). The aim of all the activities was to facilitate direct exchange between IAMO doctoral students and a number of stakeholders in Georgian agriculture, from policymakers to farmers' associations. The meetings assumed various formats, such as lectures, group discussions, interviews and "field" trips. The visit was kicked off by two panel discussions at ISET, with speakers from politics and academia. An open Q&A session was also organised with the Georgian Farmers Association (GFA). A visit to the Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation,

GIZ) and the United States Agency for International Development (USAID) was followed by an excursion to a number of local funded projects in fruit farming. Also on the programme were a tour of a modernised dairy farm and a trip to a historic vineyard. During a concluding discussion session, the visit's findings were reviewed in small working groups of IAMO and ISET students, focusing on prospects and challenges.

This article gives an outline of the topics discussed during the week and a glimpse into the state of Georgia's agricultural and rural development. We will begin with a brief background of rural areas in Georgia, then summarise the essential challenges for rural development in Georgia as well as future prospects for rural areas from different perspectives.

## Rural areas and the agricultural sector in Georgia

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### *Background*

The countryside in Georgia is dominated by the high chains of the Caucasus Mountains and extensive grassland plains. Agriculture has always been vital for the





*Group photo of ISET and IAMO students, Georgia*

food security of this small country, and also for a long time the most important source of employment and income. Georgia benefits in particular from a mild climate and substantial rainfall. The fertile soils and the moderate climate were also advantageous for the area during the Soviet era. A large proportion of the population found employment in agriculture. Until 1992 the country was a centre of production for fruit, vegetables, wine and tea, with a substantial share of its production being exported to other regions of the Soviet Union. Georgia, on the other hand, was reliant on the wheat and meat production of other Soviet states.

#### *Situation today*

Similar to other successor states of the Soviet Union, Georgia is in a period of major political, economic and social upheaval. Independence in 1991 was followed by substantial structural reforms, which bypassed the rural sector for many years, however. It is only in the last few years that efforts have been made to modernise agriculture, for example by land reforms that have led to a predominance of small farms, with the average size at 1.5 ha. (GEOSTAT, 2015). In 2012 these were farming 35 % of Georgia's land mass, compared to 43 % in 2000 (WORLD BANK, 2015). By 2014 the proportion of the population living in rural areas had fallen to 46.3 % (GEOSTAT, 2015) as had the numbers of those working in agriculture (1992: 668,000; 2013: 332,000).

In individual conversations it was emphasised that Georgia represents an exception in its transition process in

comparison to other countries of the former Soviet Union. For example, agriculture in Georgia benefits from favourable climactic conditions, which makes it a very attractive source of income. Another factor in processes of rural development is the presence of local and international NGOs, as well as national efforts to combat corruption.

Rural society in Georgia ranges between a traditional way of life with low income opportunities and the modern vision of a small but dynamic generation of young farmers. The countryside and agriculture have now achieved a new status for younger farmers than in years gone by.

#### **Challenges facing rural development**

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Rural areas in Georgia are still in the process of transition. In our conversations these ongoing changes were described partly as a challenge, but partly as an opportunity too. Many obstacles to rural development are closely interlinked.

##### *Socioeconomic factors*

The demographic development is a major socioeconomic obstacle to rural development. The Georgian population is continually declining, accompanied by an aging of society. This trend has an impact on the labour supply as well as productivity. Another socioeconomic problem is flight from the countryside and high unemployment amongst young people.



*Vine cultivation in Khaketi, Georgia*

### *Governance and institutions*

For many years the agricultural sector was neglected by politicians. In our conversations with farming representatives, criticism was voiced of the limited state influence as well as the lack of implementation of policy measures. One student, for example, complained that a certain degree of state intervention was necessary, but at present this was a failure.

Policy failures in land law were also criticised. Poor legal security in land law is impeding investment in the agricultural sector, respondents said. The murky legal situation is causing conflicts between farmers regarding the allocation of land and its use for crop cultivation or as pasture. This often leads to an informal process of land allocation. One of the people we spoke to illustrated this informal process of land allocation: "How do you get land? Build a fence around it, then the land's yours."

Low levels of investment in agricultural research is also impeding the successful development of rural areas. According to ISET students, research is needed in many areas, from food standards, life in rural areas and its development, to value chains. The lack of farm-level data is a problem for agricultural research.

### *Production and markets*

There are further obstacles at farm level. Insufficient provision of water due to poor irrigation, outdated technology, a shortage of farm inputs and a lack of agricultural extension services limit agricultural production. One area of focus must be to increase agricultural productivity, for

this is way below the level within the EU. Output in the agricultural sector fell from 1.220 million USD in 1997 to only 728 million USD in 2012. This means that Georgia is strongly reliant on food imports today (FAOSTAT, 2015).

Sales opportunities for high-value crops, the main income source for Georgian agriculture in the Soviet era, are currently very limited. It is principally the wine industry that has benefited from support, enabling it to compete on international markets.

### *Environmental problems*

Environmental problems are a challenge for agriculture as well as for rural areas in general. Examples of environmental problems are soil erosion, deforestation and a decline in biodiversity. In particular, soil erosion and poor fertility, the consequences of overgrazing, and an absence of crop rotation are closely linked to policy failures.

## **Visions of the future for rural development**

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Although obstacles currently exist that are severely retarding Georgia's agricultural development, a look back at Georgia's recent past as one of the most important suppliers of high-quality agricultural products within the Soviet Union suggests that the country has high agricultural potential. To harness this agricultural potential, however, a vision for the future of the countryside must be developed. Currently, tourism is seen as one of the big hopes of the Georgian economy. But the same is true





*USAID visit to a fruit farm, Georgia*

of the increase in agricultural exports that farmers are striving for. So should the countryside rely on preserving traditions to attract tourists? Or should it produce goods for the global market on highly productive agricultural land? Both strategies would tie in with the strengths of the Georgian economy in the Soviet era.

#### *The government*

A new government was elected in Georgia in 2012. Whereas the outgoing government had neglected agriculture to promote its vision of a modern, urban society the new government has put agriculture back on its list of priorities. One of the new government's first measures to support farming was legislative and financial support for agricultural cooperatives. As far as the allocation of land rights, however, the government still appears undecided. Under the previous government, foreign investors had an increased interest in Georgia's agriculture. The new government, on the other hand, started by banning the sale of land to foreign investors in June 2013. This ban was a spontaneous decision to stop potential irreversible developments before the actual policy of the new government could get a foothold. Although it may still take some time before Georgian agricultural policy takes a clear-cut course, Georgia has big ambitions of joining the EU. For this reason, Georgian agricultural and food policy is already partly geared towards EU agricultural policy.

## **The rural population**

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The new programme to support cooperatives has induced some rural communities to apply for financial support. To make their applications more successful and ultimately convince the government of their plans, some of these communities have joined the Georgian Farmers Association (GFA). An initiator of one of these rural cooperatives said that the main objective of their efforts was to preserve traditional herding culture and craftsmanship. Another aim is to keep the population in the countryside – a goal that seems close to the heart of the older generation in particular. Especially in remote mountainous regions this prospect of migration is a threat to the maintenance of national boundaries. The founders of rural cooperatives expect support from central government for their plans to preserve the traditional, rural way of life. In most applications, new business ideas play a minor role.

#### *Farmers as new entrepreneurs*

Some of the farmers interviewed, who are also represented by the GFA, belong to a young and enterprising group. Although they only make up a small proportion of people employed in agriculture, they are anxious to support an association such as the GFA and use it as a platform for knowledge-sharing. They also see the GFA as an opportunity for representing their interests to national policy-makers. Many of the young GFA members introduced themselves proudly as "farmers". This differentiates



them from the older generation, who are often described as "peasants". The young farmers frequently come from urban areas, are well educated and have relatively good access to credit. This credit is used to invest in the production and marketing of exclusive agricultural goods for the global market such as dyed wool,

nuts and fruit. In interview, young farmers said that the government needs to take action in the following areas: improving irrigation management, establishing legal guarantees of land ownership, improving professional training for highly qualified farmers, and opening up access to information.



*GFA discussion group, Georgia*

A further vision for rural areas is linking agriculture with tourism. An example project we visited is the wine region in Kakheti. The aim here is for traditional wine production (and the annual wine harvest) to attract both foreign and domestic tourists. Other examples are a few organic farms which also offer accommodation and an insight into production for tourists, thus giving them an understanding of the importance of the countryside.

#### *Development assistance in rural areas*

International development aid organisations are also important actors in shaping Georgia's agricultural and rural development. The organisations we interviewed were GIZ and USAID. The latter is helping with access to modern technology, which should improve the production of high-value crops. With this and other projects the organisation is seeking to help build a modern, competitive agricultural sector.

#### *Research in agricultural economics*

After having been neglected for many years, agricultural development is currently attracting an increased interest from a number of different actors, including within the research community. In 2013 ISET, one of the most esteemed educational and research institutions in Georgia, opened its own department for agricultural economics. This reflected ISET's decision to invest in the education of young agricultural economists and in research in this field. Such research can play an important role in developing strategies to combat current institutional limitations in rural areas and working out possible future scenarios. Exchanging ideas at an

international level also allows Georgian researchers to use comparisons to explore potential development models for Georgia. For example, Phatima Mamardashvili, from the Agricultural Policy Research Centre at ISET, was examining the Swiss development model. Here the government subsidises traditional livestock farming methods to preserve the landscape and keep the mountainous regions attractive for the nation. The Swiss model also includes the development of new business opportunities for marketing local products. An alternative development model, based on Australian experiences, was presented by Simon Appleby, head of Yfn-Georgia, which belongs to a global agribusiness based in Hong Kong. Here a livestock farming business thrives, based on exports with only low-level subsidies.

### **Prospects**

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The rural areas of Georgia are still characterised by traditional farming methods and low incomes. To change the current situation and realise the vision of a fundamental regeneration, the active participation of various actors is required. How the countryside develops in the future depends on the decisions that are taken today. Even if the vision of a modern Georgian agricultural sector of the future deviates partly from traditional structures, agricultural and rural development must not be impeded. In a country which is equally known for its geographical diversity and varied cultural landscape, the traditional and modern ought to be able to exist side by side.



*Panel discussion at ISET, Georgia*

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*Keynote speech by Hans Joachim Schellnhuber (PIK), IAMO Forum 2015*

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## IAMO Forum 2015: "Agriculture and Climate Change in Transition Economies"

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LIODMILA CHATALOVA, DANIEL MÜLLER, BRITTA PAASCHE, AMANDA SAHRBACHER,  
FRANZISKA SCHAFT, DANIELA SCHIMMING, SHEMEI ZHANG

The agricultural sector accounts for a quarter of global greenhouse gas emissions, chiefly through land-use changes, fertiliser use and livestock farming. At the same time, agriculture is the sector most seriously affected by climate change, and needs to adapt itself to changes in temperature and the water cycle. Avoiding greenhouse gas emissions and adapting agriculture to climate change thus represent key challenges to the future of the sector.

In the light of this, the IAMO Forum 2015 from 17 to 19 June saw more than 170 academics and decision-makers from politics and business come to Halle (Saale) to discuss the causal relations between climate change and agriculture, with a focus on the transition countries of Eastern Europe, the former Soviet Union and Eastern Asia. At the conference, which was entitled "Agriculture and Climate Change in Transition Economies", participants from 21 countries presented their research findings and solution strategies at three plenary sessions, 16 parallel sessions and a concluding panel discussion.

### Conference opening

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The conference was opened on the first day by IAMO Director Professor Alfons Balmann. In his lecture he outlined the key factors which will have a major influence of the future development of agriculture. Besides a growing world population and the change in dietary habits, he highlighted the growing demand for bioenergy, technological developments and, not least, the need to avoid the effects of greenhouse gases as well as adapting to climate change. Because of their agricultural structures, poor infrastructures and weak institutions, Balmann believes that these measures of avoidance and adaptation present a huge challenge to transition countries in particular.

In his keynote speech, Professor Hans Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research (PIK), Germany, discussed "Climate Risks and Food Security". According to Schellnhuber, more frequent and longer occurrences of extreme weather events will have a big impact not only on agriculture but on humanity in general. He took IAMO Forum participants on a



historic journey through the development of climate. With the industrial revolution that began in 19<sup>th</sup> century Britain, people started mining fossil fuels. This has lasted to the present day, having now spread to almost every corner of the earth. It has been accompanied by a global increase in temperatures, as several studies from the PIK demonstrate. If only short time periods are considered, fluctuations are clearly visible, but the long-term trend is clear. Global warming is not slowing down. Schellnhuber emphasised that even the two-degree target, which has been agreed upon, harbours big risks. It would mean the end of the Great Barrier Reef in Australia, the Arctic summers would almost vanish, as would the Alpine glaciers and the ice in Greenland. Right now, even achieving this two-degree objective appears to be a great challenge. In his concluding remarks, the climate scientist warned that human civilisation was in grave danger.

### **Regional assessments of options for mitigation and adaption to climate change**

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Feeding the growing population and preventing dangerous climate change are two of the greatest challenges facing humanity. Professor Pete Smith, University of Aberdeen, Scotland, UK, reported such issues from supply- and demand-side climate mitigation potentials respectively. He pointed out that supply-side mitigation measures (e.g. changes in land management) might either enhance or negatively impact food security, while demand-side mitigation measures (e.g. reduced waste or demand for livestock products) could benefit both food security and

greenhouse gas mitigation. But given the enormity of challenges all options should be considered Smith emphasised that supply-side measures should be implemented immediately with focus on sustainable intensification. Since behavioural changes on the demand-side take usually a lot of time and an efficient steering is in addition often difficult, policy measures with multiple goals should be implemented that address various policy areas.

Professor Maximilian Auffhammer, University of California, Berkeley, USA, mainly reported on detecting and attributing the impact of climate change on agriculture. He took rice production as an example and applied detection and attribution (D&A) to simulating the pathways of climate on crop yield including rising temperatures, changing relative humidity, water stress and CO<sub>2</sub> fertilisation. Auffhammer also put forward some immediate research needs, such as a framework and language for D&A, extensive margin impacts of climate change, climate drive of rural to urban migration, and impacts of pollution air on local yield. Meanwhile he insisted more economist should be involved in the studies of food security and climate change.

### **Consequences of climate change and adaptive strategies on the operational level**

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The increasing food demand and the limited availability of arable land and water resources are central challenges for Chinese agriculture. Professor Jikun Huang, Centre for Chinese Agricultural Policy (CCAP), Chinese Academy

of Sciences, China, presented feasible adaptation strategies to face global climate change. Using empirical data from climate change studies in nine provinces, he focussed on the repercussions of climate change (mainly drought and flooding) on major crop yields and prices. Huang employed an econometric model and a general equilibrium model (GEM) to show the overall effects of a temperature increase. While the effects would be negative, he expected them to be less severe than formerly predicted thanks predominantly to adjustment strategies implemented by producers and consumers. Improving the water management infrastructure, the arable land management, crop and plant diversification and irrigation practices turned out to be particularly effective strategies to reduce the climate-related risk. Government also significantly contributes to the agricultural adaptation to extreme climate change by providing information and

early warning systems as well as financial and technical support.

Professor Vladimir Romanenkov from the All-Russian Institute of Agrochemistry in Moscow, Russia, presented the results of a long-term experimental study correlating the use of fertilisers and CO<sub>2</sub> binding in Russian agriculture. The jumping-off point in this study was the reality of global crop shortages and price increases caused by climate change. The temperature increase in Russia is about 2.5-times higher than the global average. Therefore, possible negative consequences in that region are likely more pronounced. These consequences do have a significant influence on the soil use because CO<sub>2</sub> binding decreases with increasing soil temperature. Romanenkov used a simulation-based climate model to study the effects of three soil management scenarios – (1) business as usual (2) profit maximisation (3) sustainable soil



*IAMO Director Alfons Balmann, IAMO Forum 2015*



*Discussions with the audience, IAMO Forum 2015*

management – on the carbon-binding capacity of crop plants in Russian black earth and podzol (also known as grey or ash earth) regions. The experiments indicated that the positive effects of soil use adaptations would be noticeable only long after implementation in the 2030s and 2040s and will be more pronounced outside the Russian black-earth regions. The sustainable soil management scenario showed the largest benefit in terms of increased carbon sequestration.

### **Opportunities and challenges of climate-smart agriculture**

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The concept of "climate-smart agriculture" (CSA) is designed to provide three benefits: (1) Sustainable productivity increases to secure incomes as well as food and nutrition security; (2) adaptation and increased resilience to the consequences of climate change and (3) reduction in the agriculture-related emission of greenhouse gases. In her presentation, Dr Leslie Lipper, Food and Agriculture Organization of the United Nations (FAO), Italy, provided an overview of the CSA instruments and strategies and elaborated on their implementation in various agricultural settings and regions. In this context, she reported in detail on the experience and results with the "Economics and Policy Innovations for CSA" (EPIC) programme in Zambia, Malawi and Vietnam. Agricultural consultation services are particularly conducive to the expanded implementation of climate-smart methods. Yet, a shortage of such services still exists. Access to financing and technical support also promote the successful CSA implementation.

However, the CSA concept is still not widely implemented in transitional economies. According to Lipper, the FAO will make the first implementation steps in Tajikistan and Kyrgyzstan. The focus will be on conservation agriculture and soil protection.

Professor Hermann Lotze-Campen of the Potsdam Institute for Climate Impact Research (PIK), Germany, presented thoughts on the challenges and benefits of a CSA and soil use on the global level. Based on the predicted population and income growth and changing food patterns, the demand for agricultural products will increase in the future. This applies in particular to the Middle East, Southern Africa and South Asia because these are the regions, which will likely be most affected by negative climate change consequences. There are several promising ways to adapt agricultural production systems to climate-related change. Among these worthwhile approaches are the use of technologies for sustainable soil use, the cultivation of crop plants, changes in the sequences of crop rotations and improvements in the irrigation efficiency and water infrastructure in agricultural production systems. In addition to production-related technical measures, insurance schemes against crop failure for income security purposes may become more relevant. Further promising approaches rely on institutional change involving the initiation and diversification of international trade relations as well as taxation systems or compensation for global public goods. At the same time, measures to reduce greenhouse gases, e.g. to protect the tropical rain forests must be balanced against the needs of local populations.



*Speaker Leslie Lipper (FAO), IAMO Forum 2015*



## Panel discussion

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In the concluding panel discussion, Professor Alfons Balmann and his guests discussed the prospects of the concept of "climate-smart agriculture" (CSA). Dr Georg Vierling, CEO of Südzucker International GmbH, Germany, emphasised the importance of reconciling a climate-aware agriculture with economic interests. He also indicated how difficult it could be for small agricultural companies to implement adaptive measures in response to climate change because they usually do not have the financial means to implement new technologies or the required expertise and training. Südzucker International GmbH runs spin-offs in Moldova including two sugar refineries and one biogas plant. Wolfgang Vogel, President of the Farmers' Association in Saxony, Germany, emphasised the role climate change will play in the survival of agriculture. The higher frequency of pre-summer droughts and excessive precipitation at harvest time are troublesome for farmers in Central Germany. As early as 2010, the German Farmers' Association proposed climate targets in a strategy paper. Among other targets, the paper called for a 30 per cent reduction in methane and nitrous oxide emissions by comparison with 1990 emissions. Members of the association contended that this target is ambitious but achievable. Inna Meteleva, Vice Chairperson of the agricultural holding Svarog West Group, Ukraine, considers the creation of a precision agriculture as a strategy for climate-sensitive agricultural production. Above all, she sees a need for a suitable management system aside from well-trained specialists. In her enterprise, the

continuous monitoring and improving of on-site processes are essential components in resource-preserving and efficiency-boosting agrarian production systems. According to Ludmila Orlova from the Russian National Movement for Conservation Agriculture, Russia, the objective is to achieve the highest possible crop output using ecological principles. Her movement is ready to assist in the achievement of this goal by providing information and training for farmers and students of agriculture and also by running so-called "Innovative Farms" as agricultural model enterprises. Dr Leslie Lipper made the audience aware of drastic differences between income-strong and income-weak farmers. She expects income-weak farmers to have difficulties switching to climate-aware production systems because they do not have the resources to stay financially afloat during the transition. In the transition years, the adjustment process to soil-preserving production methods for example will cause significant decreases in crop yields. Only affluent farmers can sustain operations in those years. She pleaded for measures to back-up farmers who face such risks and further argued for increased information flow and better training in the agricultural sector. Professor Hermann Lotze-Campen directed the attention to the connections between the energy and agricultural sectors. He reminded the audience that rising energy prices do not only influence the fuel prices for farm equipment but also the fertiliser prices. Furthermore, he expressed his support for levying taxes e.g. on the utilisation of environmentally damaging production processes. In his opinion, communities should levy taxes on greenhouse gas emissions and water pollution, which reflect the costs to the



community. Professor Jikun Huang recognises a danger in the intensive land cultivation in China and fears soil overuse with the consequence of future productivity declines. He further criticised the lack of significant progress in the climate-smart agricultural production by comparison with developments in prior years. At this point, scientists and politicians are requested to provide stronger guidance and support to farmers. In summary, the panellists agreed that farmers face challenging tasks in the creation of adaptable and efficient production processes with minor climate-damaging emissions.

IAMO organised the event in cooperation with the Potsdam Institute for Climate Impact Research (PIK),

Germany. The third day of the conference, which was more oriented towards practice, was organised in collaboration with the German Agribusiness Alliance, Committee on Eastern European Economic Relations (OA), and supported by the Edmund Rehwinkel Foundation. The entire conference was funded by the Federal Ministry for Economic Cooperation and Development (BMZ), the Ministry for Science and Economics Affairs of Saxony-Anhalt, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Edmund Rehwinkel Foundation and the German Research Foundation (DFG).



*Panel discussion with Alfons Balmann (IAMO), Inna Meteleva (Svarog West Group), Ludmila Orlova (National Movement for Conservation Agriculture), Georg Vierling (Südzucker International), Wolfgang Vogel (Farmers' Association in Saxony), (from l. to r.),*



*Conversations between plenary sessions, IAMO Forum 2015*

## IAMO – A brief portrait

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### Aims and tasks

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The Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO) focuses on the far-reaching economic, social and political processes of change in the agricultural and food sector, and in rural areas. Its geographical area of research extends across Central, Eastern and Southeastern Europe. The transition countries of Central and Eastern Asia, including China, have been added to this remit. Research into Central Asia, in particular, has intensified over the past couple of years. In spite of great efforts and much success, the development of the agricultural and food sector in many of these regions still lags far behind that of Western industrial nations, and some of them are following their own, very specific development paths. Furthermore, a huge gulf is emerging between successful and stagnating regions within individual countries, as well as between states themselves.

Large emerging nations such as Russia and China have risen to become "global players" on world agricultural

markets. Given the potentially threatening food crises, we need to determine what must happen in these key economies to promote environmentally sustainable economic growth in agriculture and the food sector, and ensure long-term national and global food security despite the growing demands being placed on agricultural resources. In the countries we cover, but not only in these, adapting agriculture and land use to climate change in a globalising economy also represents a major undertaking. Because of this, IAMO faces a very broad research challenge, both thematically and regionally.

With its thematic and geographical focus, IAMO is a unique global research institution. Since its establishment in 1994 it has been a member of the Leibniz Association as a non-university research centre. The Leibniz Association includes research institutes which are scientifically, legally and commercially independent, together with service institutions. Both these are jointly funded by the federal administration and the *Länder* to address current problems of national interest ([www.leibniz-gemeinschaft.de](http://www.leibniz-gemeinschaft.de)).



IAMO building

The aim of IAMO's work is not just to help understand, but also manage the far-reaching processes of change to reduce ongoing development deficits in the agricultural and food sector, as well as in the rural areas of the Institute's geographical area of research. This goal gives rise to the three core tasks of the Institute:

- Internationally oriented research into agricultural and food economics including the development of rural areas.
- Exchange of ideas between the academic, business and political communities.
- Support for young academics.

The Institute sees itself as a driving force of international research into agricultural economics. Outstanding research is the engine of the Institute's development, and it creates the conditions in which the other two core tasks can be performed. For instance, IAMO acts as a forum for exchange, and in this way it supports the cross-linking of German research and dialogue between decision makers from the academic, political and business communities. In view of the unprecedented major challenges, delivering scientifically based policy advice is becoming an increasingly important part of IAMO's work. The Institute also uses its expertise and capacities to help academic scholars become fully qualified. Here there is a particular focus on supporting young academics from partner countries. Through its international orientation and cooperation with other teaching and research institutes, IAMO is helping to strengthen Halle's profile as

a centre of science and research in Central Germany. Our close cooperation with Martin Luther University Halle-Wittenberg (MLU) – especially with the Institute of Agricultural and Food Sciences at the Faculty of Natural Sciences III, and the Economic Sciences Department at the Faculty of Law and Economic Sciences – is an important factor here.

### **Academic departments, research fields and key topic areas**

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IAMO's threefold research structure with the departments *Agricultural Policy*, *Agricultural Markets* and *Structural Development* (these are abbreviated descriptions) is derived from the orientation of its research. The basic conditions of agricultural policy and opportunities for shaping policy, markets in the agricultural and food sector, and the development of farms and structures in rural areas are all analysed by the Institute. Developments at the individual farm level and in rural areas, the creation of functioning agricultural markets, and the shaping of agricultural policy are all closely interlinked. Decisions relating to farm development and agricultural policy, as well as market processes also have an impact on human-environment interaction in rural areas. In addition, they have an effect on the two key issues of the future: food security and food safety.

IAMO's academic work is organised interdepartmentally into five key research areas which focus on major problem areas of agricultural development in Eurasian



transition countries and emerging nations. The more intensive level of communication in key research groups counteracts any possible fragmentation of research. Besides positive bundling effects, greater individual responsibility of the key research groups allows efficient, result-oriented research management.

With the new medium-term agenda for 2016-22, which came into effect on 1 January 2016, we have restructured our emphasis, adapting our key research areas to the changing problems in those regions of the world studied by IAMO. The following will now be given greater consideration than in the 2008-15 medium-term agenda:

- The impact of global processes on the economy and environment of the study region
- Developments in Central Asia, the Caucasus region, Russia and Ukraine
- Comparative analyses between countries
- Interdisciplinarity of research
- Dialogue with society, politics and business

The number of key research areas has been expanded from four to five, to enable us, on the basis of the old research areas, to cover crucial developments more accurately. The new research areas are:

- I. Policy and Institutions
- II. Natural Resource Use
- III. Livelihoods in Rural Areas
- IV. Organization of Agriculture
- VI. Agricultural Value Chains

## Institutional structure

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IAMO is a public foundation. Its bodies are the Board of Trustees, the Directorate and the Scientific Advisory Board. The Institute is divided into three academic departments:

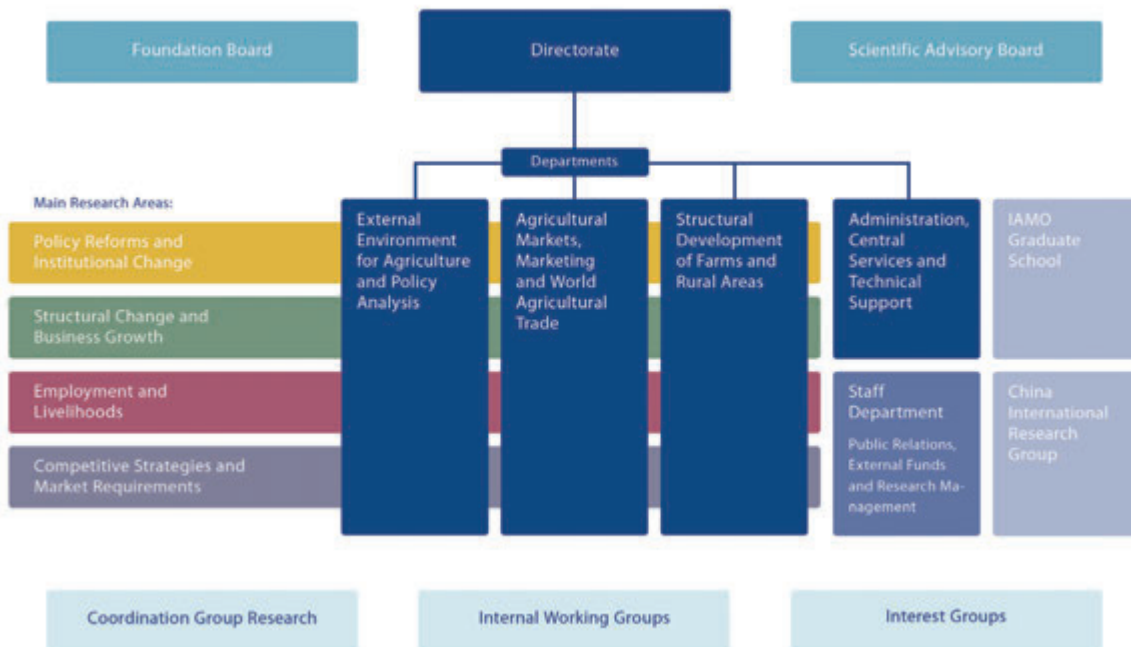
- External Environment for Agriculture and Policy Analysis; head of department is Prof. Dr Thomas Herzfeld
- Agricultural Markets, Marketing and World Agricultural Trade; head of department is Prof. Dr Thomas Glauben
- Structural Development of Farms and Rural Areas; head of department is Prof. Dr Alfons Balmann

The heads of the academic departments, together with the head of

- Administration and Central Services:  
Hannelore Zerjeski,

form the Directorate of the Institute. Since January 2013, all four directors of the Institute have been on an equal footing as managing directors with collective responsibility.

In coordination with the Board of Trustees, this collegiate body manages the Institute's business and directs the long-term research and development planning at IAMO. The Scientific Advisory Board advises the Directorate and the Board of Trustees on academic matters and carries out regular evaluations of the Institute's work.



*Organigram of the Leibniz Institute of Agricultural Development in Transition Economies*

As of 1/1/2016 the following were members of the Board of Trustees: *Ministerialrat* (Undersecretary) Thomas Reitmann (Chairman; Ministry of Science and Economic Affairs of Saxony-Anhalt), *Ministerialdirigent* (Head of Section) Friedrich Wacker (Deputy Chairman; German Ministry of Food and Agriculture), *Staatsekretärin* (State Secretary) Anne-Marie Keding (Ministry of Agriculture and the Environment of Saxony-Anhalt), *Ministerialrat* (Undersecretary) Jobst Jungehülsing (German Ministry of Food and Agriculture), Prof. Dr Dr h.c. Dieter Kirschke (Humboldt University, Berlin), Prof. Dr Bernhard Brümmer (Georg August University, Göttingen), Prof. Dr Sebastian Lentz, (Leibniz Institute for Regional Geography, Leipzig, IfL), Prof. Dr Martin Odening (Humboldt University, Berlin), Prof. Dr Michael Bron (Martin Luther University Halle-Wittenberg) and Dr Lothar Hövelmann (Manager of the DLG centre of expertise for agriculture).

As of 1/1/2016, the following were members of the Scientific Advisory Board: Prof. Dr Bernhard Brümmer (Chairman; Georg August University, Göttingen), Prof. Dr Hermann Lotze-Campen (Deputy Chairman; Potsdam Institute for Climate Impact Research (PIK)), Prof. Dr Martina Brockmeier (Hohenheim University), Prof. Dr Silke Hüttel (University of Rostock), Dr Ekaterina Krivonos (FAO, Trade and Markets Division), Prof. Dr Laure Latruffe (French Institute for Research in Agriculture (INRA) – Rennes), Prof. Ada Wossink (University of Manchester), Dr Martin Banse (Johann Heinrich von Thünen Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries (TI)), Prof. Dr Olaf Christen (Martin Luther University, Halle-Wittenberg (MLU)), Prof. Dr Emil Erjavec (University of Ljubljana), Prof. Dr Imre Fertő (Corvinus

University of Budapest) and Prof. William H. Meyers (University of Missouri).

### **Cooperation with university institutions**

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Since February 1998 IAMO and MLU have been working together under a comprehensive cooperation agreement, which includes joint appointments. IAMO's work is especially closely linked with the Institute of Agricultural and Food Sciences, which is part of the Faculty of Natural Sciences III at MLU, and the Economic Sciences Department at the Faculty of Law and Economic Sciences. The heads of IAMO's academic departments take part in MLU's teaching and committee work. Many academic members of staff from IAMO with post-doctoral and doctoral qualifications are also involved in university teaching, and in the running of a nationwide PhD student programme. Staff links between MLU and IAMO are also strengthened by the fact that MLU's Prorector of Research and Student Education, Prof. Dr Michael Bron, sits on IAMO's Board of Trustees. Cooperation between MLU and IAMO assumed a new dimension when the ScienceCampus was opened in Halle in June 2012. The ScienceCampus aims to strengthen the interdisciplinary collaboration between the Halle-based Leibniz Institutes and the corresponding academic departments at Martin Luther University Halle-Wittenberg in the sphere of plant-based bioeconomy. It will also advance higher education in the Halle (Saale) region, as well as supporting knowledge and technology transfer in politics, business and public life.

IAMO also works in close conjunction with many other universities, chiefly with faculties of agriculture and economics. Depending on the requirements of interdisciplinary research, other social science and humanities subjects may be brought in, e.g. human geography and history. As far as our partners in Germany are concerned, we have strong links with Berlin, Bonn, Göttingen, Hohenheim, Kiel, Munich and Münster. Since 2010 IAMO has had a cooperation agreement with the Humboldt University in Berlin. There are close relationships, too, with chairs of agricultural economics and institutes at agricultural and economics colleges and universities in our partner countries.

Amongst our partner universities abroad we should give special mention to the Higher School of Economics in Moscow (HSE) in Russia; in Ukraine, the National University of Life and Environmental Sciences of Ukraine and Taras Shevchenko National University, both in Kiev; in Uzbekistan, the Samarkand Agricultural Institute (SAI); in Kazakhstan, the Karaganda State University (KSU); in Poland, the University of Warsaw (UWAR); in Slovakia, the Agricultural University in Nitra (SAU); in Slovenia, the University of Ljubljana; in Bulgaria, the Agricultural University, Plovdiv; in Hungary, Corvinus University, Budapest and the Faculty of Environmental Sciences at Szent István University in Gödöllő; in Serbia, the University of Belgrade; and in Albania, the Agricultural University of Tirana (AUT). We should also mention the Center for Agricultural and Rural Development (CARD) at Zhejiang University and Sichuan Agricultural University in China, Thammaset

University in Thailand, as well as Hanoi University of Agriculture in Vietnam. In addition, IAMO maintains a wide range of scientific exchange with Wageningen University in the Netherlands; in Denmark, the University of Copenhagen; in Sweden, the Swedish University of Agricultural Sciences (SLU) in Uppsala and the Centre for Environmental and Climate Research (CEC) in Lund; in Switzerland, the Swiss Federal Institute of Technology in Zürich (ETH); and in Italy, the University of Bologna (UNIBO) and the University of Milan. In Great Britain, IAMO cooperates with the University of Edinburgh, the University of East Anglia in Norwich, Newcastle-upon-Tyne University in Newcastle and the University of Kent in Canterbury. In the USA we have close contacts with Stanford University, Indiana University and the University of Wisconsin in Madison.

### **Cooperation with non-university institutions**

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The numerous contacts with non-university institutions are also very important for IAMO's work. We collaborate with the Johann Heinrich von Thünen Institutes of Farm Economics, Rural Studies, and Market Analysis and Agricultural Trade Policy in Brunswick-Völkenrode (TI); the Leipzig-based Leibniz Institute for Regional Geography (IfL); the Leibniz Centre for Agricultural Landscape Research (ZALF) in Müncheberg; the Kiel Institute for the World Economy (IfW) in Kiel; the Halle Institute for Economic Research (IWH) in Halle; the German Institute of Human Nutrition, Potsdam-Rehbrücke; the Max Rubner Institute (Federal Institute of Nutrition and Food, MRI)

and the Potsdam Institute for Climate Impact Research (PIK).

There are close relations with many non-university research institutions abroad, especially in Central and Eastern Europe, Southern Europe and Eastern Asia. We have excellent and regular professional contact with institutes in academies of sciences or agricultural sciences, regional research institutes and advisory boards, as well as agricultural economics research institutes that are subordinate to the corresponding ministries of agriculture. Of note here are: in the Czech Republic, the Institute of Agricultural Economics and Information (ÚZEI) in Prague; in Hungary, the Research Institute of Agricultural Economics (AKI) in Budapest; in Russia, the All-Russian Research Institute of Agricultural Economics (VNIIESH), the A.A. Nikonov All-Russian Institute for Agrarian Problems and Information Theory (VIAP) and the Eurasian Center for Food Security (ECFS), all in Moscow; in Ukraine, the Ukrainian Agribusiness Club (UCAB), the Institute of Agricultural Economics (IAE) and the Institute for Economic Research (IER), all in Kiev; in Belarus, the Research Center of the Institute for Privatization and Management (IPM) in Minsk; in Kazakhstan, the Analytical Center of Economic Policy in the Agricultural Sector (ACEPAS) and the Central Asia Regional Economic Cooperation Institute (CAREC), whose partners are several international development banks and organisations as well as Central Asian countries and China; in Armenia, the International Center for Agribusiness Research and Education (ICARE); in Georgia, the Georgian Center for

Agribusiness Development (GCAD); in China, the Center for Chinese Agricultural Policy (CCAP) in Beijing, and the Institute of Botany in Kunming, both at the Chinese Academy of Sciences. IAMO's partners in Western and Northern Europe are: in Belgium, the Centre for European Policy Studies (CEPS) in Brussels; and in France, the Centre for Studies and Research on International Development (CERDI), Clermont-Ferrand, and the French Institute for Research in Agriculture (INRA). Our partners amongst international organisations are the World Bank, the International Food Policy Research Institute (IFPRI), the International Water Management Institute (IMWI-CGIAR) and various institutions of the European Commission, such as the Joint Research Centre in Seville (IPTS).

### **Supporting young academics**

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One of IAMO's three core tasks is to help develop the next generation of researchers. In particular, therefore, the Institute supports the study for doctoral and post-doctoral degrees. A large number of dissertation topics are also assigned for master's, diploma and bachelor's degrees. At the end of 2015, 48 theses were being supervised at IAMO.

In the twelve months from October 2014 to September 2015, three long-standing IAMO staff members submitted their theses to Martin Luther University (two) and the Humboldt University (one) and successfully defended them:

- "Essays on education and pension policies in rural China" (Quiran Zhao)
- "Three essays on the Russian wheat export" (Zsombor Páll)
- "The potential of Russia to increase its wheat production through cropland expansion and intensification" (Florian Schierhorn)

Three external theses part supervised by IAMO staff were also successfully defended:

- "Structural change in agriculture induced by innovative biobased technologies, and agent-based approach" (Dries Maes, Hasselt University, Belgium)
- "Mikrokredite für landwirtschaftliche Unternehmen in Afrika: Zum Einfluß (in)flexibler Tilgungspläne auf Kreditzugang und Kreditrisiko" (Micro credits for agricultural enterprises in Africa: The impact of (in)flexible repayment schedules on credit access and credit risk), (Ron Weber, Georg August University, Göttingen)
- "Dynamic Food Demand in China and International Nutrition Transition" (De Zhou, Georg August University, Göttingen)

### Equal opportunities at IAMO

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With the award by the jury of the German TOTAL E-QUALITY association, IAMO was singled out in 2013 for its ongoing commitment to equal opportunities in staff management, an area in which it has been particularly successful. The TOTAL E-QUALITY rating for 2013-15

certifies that aptitude, potential and skills at work are recognised and fostered equally for men and women. The differing circumstances of IAMO employees are also taken into account, with a focus on supporting women in management positions. We will strive to facilitate compatibility of family and career, pursue staff recruitment and development based on gender equality, promote appropriate behaviour in the workplace, and ensure that equal opportunities are reflected in the principles of the Institute. With this rating IAMO makes an individual commitment to continually monitor the implementation of its equal opportunities policy and ensure it becomes permanently enshrined in the Institute's working practices.

Currently there are a number of ongoing activities to promote equality. In July 2014 a female IAMO academic was admitted to the much sought-after Leibniz mentoring programme for female academics in Leibniz institutions. The objective of the programme is to support highly-qualified postdoctoral researchers as they work towards a management position or professorship. All the Leibniz institutes based in Halle have begun to coordinate their equal-opportunities efforts, for example by holding joint seminars and applying for third-party funding for further training for women.

At present, around 60 % of IAMO staff are women. Flexible working arrangements, part-time jobs, family-friendly meeting times, individual arrangements for paternal leave, a separate parent-child office at the Institute, subsidies for pre-school childcare, as well as childcare



facilities at the annual IAMO Forum are some of the many aspects of family-friendly working to be created at IAMO, thereby simplifying the work-family balance.

### Prizes and awards

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At the 55<sup>th</sup> GEWISOLA annual conference from 23-25 September 2015 in Gießen, Swetlana Renner received the German Society of Economic and Social Sciences in Agriculture (GEWISOLA) prize for special achievement by young academics for her doctoral thesis, "Flexibility of businesses: A theoretical and empirical analysis", which was written at IAMO. Renner's thesis provides a theoretical derivation and expansion for a micro-economically oriented measure of flexibility. Her work also tests this measure of flexibility empirically using the example of Polish farms. The topic of this thesis is of high social and economic relevance. Given rapidly changing economic and socio-political conditions, business flexibility is adjudged to play a vital role for surviving on the market. Business flexibility is covered exhaustively in practical writing and popular science, but almost nowhere else; there is little on the subject in academic works. This is exactly where Swetlana Renner's thesis comes in. Her work starts by focusing on a theoretical derivation of a suitable measure, and thus also for measuring business flexibility of multi-product firms specifically. Second, the work aims to provide a more detailed characterisation of flexibility by means of commonly used economic concepts. Finally, the thesis offers an empirical analysis of measuring business flexibility and the



*Swetlana Renner*

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factors that determine it, which meets the highest methodological demands. Besides its obvious value as a contribution to scientific knowledge, the work also serves as an important springboard for answering one of the oldest debates in agricultural economics: why small farms survive in the long term in the agricultural sector despite empirical evidence of increasing economies of scale.

The IAMO academic Ihtiyor Bobojonov and the agricultural scientist Aden Aw-Hasan from ICARDA were awarded by the International Center for Agricultural Research in the Dry Areas (ICARDA) the prize for "Outstanding Scientific Article for 2014". The prize-winning article, entitled "Impacts of climate change on farm income security in Central Asia: An integrated modeling approach" presents research findings on the impact of climate change



Ithiyor Bobojonov

in Central Asia, illustrating its dependency on agro-ecological zones and socio-economic factors. The authors give an optimistic prognosis regarding the potential for policy interventions. Market liberalisation measures, for example, can limit the negative consequences of climate change, especially for Uzbekistan and Tajikistan. The article appeared in the renowned journal "Agriculture, Ecosystem and Environment". The findings presented in the paper result from a joint research project between IAMO and ICARDA.

IAMO academic Michael Kopsidis was awarded the third Fritz Thyssen Foundation prize for the best social science papers of 2014 for his article "Bäuerliche Landwirtschaft und Agrarwachstum: Südosteuropas 1870-1940 im Licht

moderner Entwicklungstheorie" (Peasant agriculture and agricultural growth: Southeastern Europe 1870-1940 in the light of modern development theory), which appeared in the *Jahrbuch für Wirtschaftsgeschichte*. In the selection process, the editors of 16 renowned German social science journals each nominated an author. In his paper, Kopsidis addresses the development problems of the agricultural sector in Southeastern Europe between 1870 and 1940. It is frequently argued that a peasant agriculture incapable of development was the most important reason for failed efforts at industrialisation and rigid economic backwardness up to the Second World War. The radical paradigm shift in modern development theory, with its positive view of peasant agriculture as the engine of market-oriented agricultural development and modernisation, has previously had no influence on



Michael Kopsidis

history-writing about Southeastern Europe. If we see agricultural growth as a demand-driven process, it follows, according to the author, that very narrow limits were placed on long-term agricultural growth in Southeastern Europe especially compared to Northwestern Europe. If we interpret the facts in the light of new development theory, we come to the conclusion that peasant agricultural producers in the Balkans exploited their growth potential as far as possible. Sluggish growth in Southeastern Europe prior to the Second World War, therefore, was not the result of a "peasant traditionalism" hostile to development and detached from the market.

For his dissertation "Impact of policy measures on wheat-to-bread supply chain during the global commodity price peaks – The case of Serbia", Ivan Djuric from Martin Luther



*Ivan Djuric*

University Halle-Wittenberg was not only awarded his doctorate, but he also received the Luther Certificate for outstanding academic achievement from the rector of the University, Udo Sträter, during an official function on 23 January 2015. In his thesis, Ivan Djuric examined Serbia's policy interventions during the global price increases for agricultural raw materials. He addressed the question of whether state measures, such as the reduction of import tariffs and taxes, really ensured stable prices for agricultural raw materials.

### **Training for doctoral students: IAMO Graduate School, seminars and Doctoral Certificate Programme**

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As part of the "Pact for Innovation and Development", which corresponds to the excellence initiative of the federal government and the *Länder* to promote science and research at German universities, the Institute established the IAMO Graduate School in 2007. Starting out for four years as a pilot measure, since 2010 it has pooled training for doctoral students at IAMO.

All doctoral students at the IAMO Graduate School participate in the "Doctoral Certificate Programme" ([www.agraroeconomik.de](http://www.agraroeconomik.de)), jointly established and run by IAMO, the Johann Heinrich von Thünen Institute (TI) and institutes of agricultural economics at several German universities. The "Doctoral Certificate Programme" offers the first structured training in Germany, and now in Austria too, for doctoral students in the areas of agricultural and food economics and rural development. The systematic teaching of essential theory and method

aims to increase the quality of students' education and improve efficiency when working on dissertation topics. Doctoral study is the third stage of a consecutive study programme, following bachelor's and master's degrees in agriculture, food and the environment. The PhD study course is jointly run by the Agricultural and Food Economics Faculty at Christian Albrecht University in Kiel, the Faculty of Agriculture at the Rhine Friedrich Wilhelm University of Bonn, the Albrecht Daniel Thaer Institute of Agriculture and Horticulture at the Humboldt University in Berlin, the departments of Agricultural Sciences, Ecotrophology and Environmental Management at Justus Liebig University Giessen, IAMO, the Faculty of Agricultural Sciences at Hohenheim University, the Institute of Agricultural and Food Sciences at Martin Luther University Halle-Wittenberg, the department of Ecological Agricultural Sciences at Kassel University, the Faculty of Agricultural Sciences at Georg August University in Göttingen, the Faculty of Economic Sciences and Center of Life and Food Sciences Weihenstephan, Munich Technical University, the Faculty of Agricultural and Environmental Sciences at the University of Rostock, the University of Natural Resources and Life Sciences in Vienna and the Thünen Institute, Brunswick. The PhD course is based on a modular system. From October 2014 to September 2015 IAMO professors and staff helped organise academic events relating to the following modules:

- "The Political Economy of Agriculture in High-Income Countries"
  - "Efficiency and Productivity Analysis I – Deterministic Approaches"
  - "Agent-Based Modelling in Agricultural and Resource Economics"
  - "Foundations of Agricultural Economics: Selected Topics"
  - "Introduction to Geographic Information Systems and Spatial Data Analysis"
- In close cooperation with the PhD students, the IAMO Graduate School also offers specific further education seminars at the Institute, for which IAMO invites outside speakers. Over the period covered by this report a seminar was held on "Academic Writing".
- Besides structured training for doctoral students, the IAMO Graduate School specifically involves IAMO academics who already have PhDs, giving them the opportunity to develop further their fields of research and gain experience in research management. The IAMO Graduate School also serves as a point of contact for all PhD students. Since March 2010 the IAMO Graduate School has been a full member of the International Graduate Academy (InGrA) of Martin Luther University Halle-Wittenberg. InGrA supports the setting up of all forms of structured doctoral programmes, coordinates the existing programmes and helps create a productive research environment, while taking into account the university's internationalisation and equal opportunities strategies (<http://www.ingra.uni-halle.de/>).
- Together with the agricultural economics professors of business, agricultural market theory, agricultural business management, and agricultural, food and environmental

policy at MLU's Institute of Agricultural and Food Sciences, IAMO also runs a PhD student seminar. This seminar acts as a forum for scientific exchange about research questions, methodological approaches and findings.

### **International China Research Group at IAMO**

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In 2008 the International China Research Group was set up at IAMO on a fixed-term basis to work on the topic "Economic Growth and Social Equilibrium in Rural China". The international research group works towards the structural and sustained international cross-linking of IAMO's research activities into economic and social processes in rural areas of the People's Republic of China. To begin with the group consisted of IAMO staff only. In 2011 these were joined by academic colleagues from Göttingen, Wageningen and Beijing. At the same time the Centre's future was secured when it received permanent part funding from the Pact for Research and Innovation.

At the end of 2015, the research group was working on fourteen projects. The thematic spectrum runs from the effects of liberalising the land market, and questions of social, health and education policy, to the impact of Chinese environmental programmes on the ecological situation and rural living conditions. The individual projects are helping to identify approaches for addressing the sharp increase in social and environmental problems in rural China. The main issues here are targeted policy measures and the shaping of a growth-inducing economic environment. In the period October 2014 to

September 2015 one internal and one external PhD were successfully completed in the China Group. As of 30 September 2015, six internal and two external PhD projects on China were ongoing.

The following are some examples of research findings. Findings from the Rural Education Action Project (REAP) show that successful learning at elementary schools in rural China is often impeded by the children's inadequate nutrition or uncorrected near-sightedness. This practical-oriented research project, which is being undertaken jointly with the Center for Chinese Agricultural Policy (CCAP) and researchers from Stanford University, is evaluating which state measures are necessary to improve the quality of nutrition, with positive effects on the personal development of children and young people. The same is true of devising an appropriate strategy to increase the numbers of children wearing glasses in rural China. Another project is examining the development of economic inequality in rural China and how reallocation programmes are affecting this.

Repeated visits by IAMO researchers to China have proven to be essential to their objective research work. Likewise, guest visits to IAMO by foreign, especially Chinese, colleagues are important for orienting research adequately to current developments. For example, the group is working together with colleagues from Sichuan Agricultural University, with whom a cooperation agreement has been signed. A key topic of research is the rental market for agricultural land to gain a better understanding of the agricultural structure in Sichuan province. More

details can be found on the web site: <http://www.iamo.de/forschung/internationale-forschergruppe-china>.

### Guests and fellowships at IAMO

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The further training and education of academic scholars is one of IAMO's core tasks. As mentioned above, IAMO focuses chiefly on supporting young academics from its partner countries. Of great importance in this regard are study visits by researchers, which can range from a few weeks to two years. Besides being involved in joint publications, those who come for long-term visits also concentrate on their doctoral studies, financed by external and IAMO grants, and third-party funded projects. From October 2014 to September 2015, 25 fellows worked at IAMO, chiefly on their theses. Over the same period 21 predominantly young visiting academics carried out research here. They came from a total of 22 countries. By working together closely on international, third-party funded research projects, young researchers from partner countries integrate themselves into the international academic community. Former IAMO staff, both from Germany and partner countries, are now working in international organisations such as the EU and World Bank, or they have acquired management positions in their respective national agricultural administrations. An even larger number of them are continuing their academic careers back in their home countries.

### Development of third-party funding

#### Projects with third-party funding 2015 (October 2014-September 2015)

##### I. Newly approved research projects with third-party funding

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- Project title: Ein räumlich-dynamischer Ansatz zu Landpachtmärkten – **LandPM\_MG und LandPM\_AB**

Funding source: DFG Sachbeihilfe

- Project title: Soziologischer Neoinstitutionalismus und Bayessche Netze: Ein Analyserahmen zur Modellierung von Migrationsentscheidungen im ländlichen Kasachstan – **SoNeoBaN I+II**

Funding source: DFG Sachbeihilfe

- Project title: Balancing trade-offs between agriculture and biodiversity in the steppes of Kazakhstan – **VW BALTRAK**

Funding source: VolkswagenStiftung

- Project title: Institutional Change in Land and Labour Relations of Central Asia's Irrigated Agriculture – **VW AGRICHANGE**

Funding source: VolkswagenStiftung

- Project title: Moldova Poverty Assessment – **Moldova Small Farms**

Funding source: Weltbank

- Project title: Schritte zu einer nachhaltigen Landnutzung in Nordargentinien – **PASANOA**

Funding source: Bundesministerium für Bildung und Forschung



- Project title: Pilotmaßnahme Agrarreformen, Wasserknappheit und die Anpassung an den Klimawandel in Zentralasien: Eine Fünf-Länder-Studie – **AGRIWANET**

Funding source: Bundesministerium für Bildung und Forschung

- Project title: Research on the influence of ethnic migration on the development of agriculture – **Ethnic Migration**

Funding source: Ministerium für Wissenschaft und Bildung der Republik Kasachstan

## II. Ongoing projects with third-party funding

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- Project title: The Global Food Crisis – Impact on Wheat Markets and Trade in the Caucasus and Central Asia and the Role of Kazakhstan, Russia and Ukraine – **VW MATRACC**

Funding source: Volkswagen Stiftung

- Project title: Schumpeter Fellowship  
Zusätzliche Mittel für das Teilprojekt "Agricultural cooperatives as economic crisis-absorbers: The role of cooperative ownership and governance" – **VW Schumpeter II**

Funding source: Volkswagen Stiftung

- Project title: International comparisons of product supply chains in the agri-food  
Sectors: Determinants of their competitiveness and performance on EU and international markets – **COMPETE**

Funding source: 7. Forschungsrahmenprogramm der EU (IAMO ist Koordinator)

- Project title: Exploring the potential for agricultural and biomass trade in the Commonwealth of Independent States – **AGRICISTRADE**

Funding source: 7. Forschungsrahmenprogramm der EU

- Project title: Verbundvorhaben KULUNDA: Wie verhindert man die nächste "Global Dust Bowl"? – Ökologische und Ökonomische Strategien zur nachhaltigen Landnutzung in Russischen Steppen – **KULUNDA**

Funding source: Bundesministerium für Bildung und Forschung

- Project title: RURAGRI: MULTAGRI – Governance ländlicher Entwicklung durch Maßnahmen zur multifunktionalen Nutzung landwirtschaftlicher Flächen  
Teilprojekt: Landnutzungskonflikte und Auswirkungen landwirtschaftlicher Entwicklungspfade in unterschiedlichen ländlichen Gebieten – **MULTAGRI**

Funding source: Bundesministerium für Bildung und Forschung

- Project title: Ausschreibung: Betriebliches Kompetenzmanagement im demografischen Wandel  
Vorhaben: Betriebliches Kompetenzmanagement zur Integration ausländischer Fachkräfte in der Landwirtschaft – **Alfa Agrar**

Funding source: Bundesministerium für Bildung und Forschung

- Project title: Determinants of Diet and Physical Activity; Knowledge Hub to integrate and develop infrastructure for research across Europe – **DEDIPAC KH**

Funding source: Bundesministerium für Bildung und Forschung

- Project title: Wissenschaftscampus Halle  
Teilprojekt: Sekundäre Inhaltsstoffe in Getreidekaryopsen als Qualitätsmerkmal: Analyse potenzieller gesundheitsfördernder Effekte sowie Verbraucherakzeptanz und Zahlungsbereitschaft – **WiCa Anthocyanin**

Funding source: Land Sachsen-Anhalt

- Project title: Wissenschaftscampus Halle  
Teilprojekt: Pflanzenbasierte Innovationen und Klimawandel – Einschätzung und Bewertung risikobedingter unternehmerischer Anpassungsprozesse sowie ihre Wirkungen auf den Märkten – **WiCa Innovationen**

Funding source: Land Sachsen-Anhalt

- Project title: Globale Ernährungssicherung und die Getreidemärkte Russlands, der Ukraine und Kasachstans – **GERUKA**

Funding source: Bundesanstalt für Landwirtschaft und Ernährung

- Project title: Deutsch-Ukrainischer Agrarpolitischer Dialog – **APD Ukraine**

Funding source: Bundesministerium für Ernährung und Landwirtschaft

- Project title: The role of environmental, socioeconomic, institutional, and land-cover/land-use change factors to explain the pattern and drivers of anthropogenic fires in post-Soviet Eastern Europe: A case study comparison of Belarus, European Russia, and Lithuania  
-Drivers of Anthropogenic Fires due to LCLUC in Post-Soviet Eastern Europe to NASA-ROSES

A.2-Land-Cover/Land-Use Change For Early Career Scientists – **NASA Fires**

Funding source: Michigan Technological University

- Project title: Economics of Climate Change Research in Dry Areas – **ICARDA**

Funding source: ICARDA

- Project title: Chefredakteurtätigkeit von Daniel Müller für das Journal of Land Use Science – **Journal Müller**

Funding source: Journal of Land Use Science

- Project title: FarmAgriPolis 2.0 – Ein Unternehmensplanspiel zum Erleben des Agrarstrukturwandels – **FarmAgriPolis 2.0**

Funding source: Landwirtschaftliche Rentenbank

- Project title: Economic and natural potentials of agricultural production and carbon trade-offs in Kazakhstan, Ukraine, and Russia – **EPIKUR**

Funding source: Wissenschaftsgemeinschaft Leibniz (WGL)

### III. Projects with third-party funding that finished in 2015

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- Project title: Between Path Dependence and Path Creation: The Impact of Farmers' Behavior and Policies on Structural Change in Agriculture – **StruWaMi**

Funding source: DFG Sachbeihilfe

- Project title: Fortfolgeantrag: Agroholdings im Agrar- und Ernährungssektor in GUS-Ländern: Entstehungsgründe, Funktionsweise und Entwicklungsperspektiven – **Agroholdings II**

Funding source: DFG Sachbeihilfe

- Project title: Third sector organisations in rural development: A theoretical and empirical analysis – **VW Schumpeter**

Funding source: Volkswagen Stiftung Schumpeter Fellowship

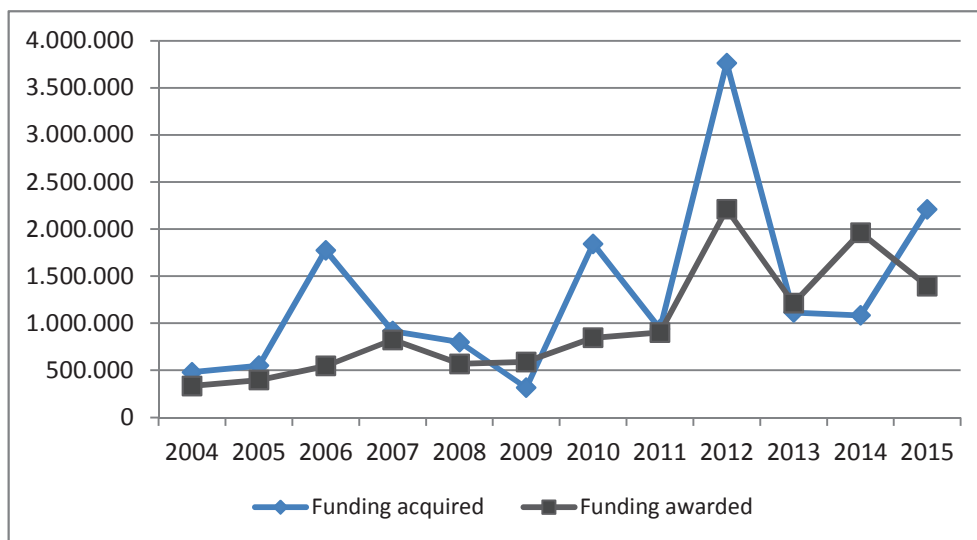
- Project title: Implications and policies for South East Asia of Reducing Emissions from Deforestation and Forest Degradation – **I-REDD+**

Funding source: 7. Forschungsrahmenprogramm der EU

- Project title: Development of an analytical tool for long-term (2050+) projections and analysis of various scenarios related to food security, climate change, etc. – **Case study 2050**

Funding source: EU

### Development of third-party funding



Source: Institute's own statistics.

Notes: The 2015 calculations are provisional (as of 31/7/15). In 2006, 1.775 million euros was approved, 601,000 of which went to project partners. In 2012, 3.763 million euros was approved, 2.008 million of which went to project partners. In 2012, 2.221 million euros were given out, 1.104 million of which to project partners.

- Project title: Barrierefrei informieren – Informiert konsumieren? Zugang zu lebensmittelbezogenen Informationen und Einkaufsverhalten von Menschen mit Sehbehinderung – Marktanalyse zu Akzeptanz und Gebrauch von Smartphones und Apps beim Einkauf von Lebensmitteln – **Barrierefrei Blindenfreunde und Barrierefrei Claere Jung**

Funding source: Gemeinschaft Deutscher Blindenfreunde von 1860 und Claere Jung Stiftung

- Project title: Strategiediskussionen in den Sektionen Impulsfonds-2014-Strategietreffen Sektion B – **Strategietreffen**

Funding source: WGL Impulsfonds

### **Selected third-party funded projects**

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Below is an outline of the most important projects for which new third-party funding has been obtained. They demonstrate that, with regard to both its basic research and scientifically based policy advice, IAMO's expertise is highly valued and that the Institute is exploring new avenues of research cooperation to permanently establish Halle as a centre of science and research.

### **Sociological institutionalism and Bayesian network: An analytical framework for modelling migration decisions in rural Kazakhstan (SoNeiBaN)**

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This project, for which a grant application was submitted by IAMO together with Gertrud Buchenrieder, formerly

of IAMO, obtained 456,927 euros of funding from the German Research Community (DFG) and began in 2015. The duration of the project is 30 months and our project partner is Martin Luther University Halle-Wittenberg (MLU).

The geographical focus of the research project is Kazakhstan. Kazakhstan is the economic motor of Central Asia and characterised by many differently motivated migration movements, some of which are politically instigated, e.g. immigration, emigration and repatriation. In addition there is considerable internal migration, the causes of which are more economic. The project is concentrating on internal migration within Kazakhstan. To date, migration research has neglected internal migration in favour of international migration movements globally, not just in Kazakhstan. By applying a new analytical research framework and a new methodology to a region with high levels of migration, the project's aim is not just to further the theoretical and methodological development of migration research, but also to obtain new findings.

To date there is no all-encompassing theory that is capable of explaining all migration processes in their complexity. For this reason a mid-range theory was used in the project to bring together approaches of different social and economic sciences in one analytical framework. Such an analytical framework must extend beyond the individual migrant and be capable of including factors of political economy, in order to link analytically the micro level with political, economic and social factors at the higher level. Based on sociological new institutionalism, the analytical

framework allows us to study decision-making in the migration process, as it depicts the behaviour of individual actors within structures and links different levels of analysis. New institutionalism is transdisciplinary and located between the political and social sciences and the humanities. For this reason sociological new institutionalism is ideally suited to investigating in a coherent analytical framework the complex network of factors that influence migration decisions of actors. Such an analytical framework requires, however, a methodological tool which is capable of modelling the various factors of the different levels simultaneously. A Bayesian network is one such innovative instrument. It is able to model the systemic complexity of migration decisions and reveal the interrelations of the different factors, thereby highlighting new ways in which migration decisions can be influenced by possible policy measures. More information can be found on IAMO's web site at: <http://www.iamo.de/forschung/projekte/details/internal-migration-in-kazakhstan/>.

### **Competence management to promote skilled foreign workers in agriculture (Alfa Agrar)**

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This highly practice-oriented project, which is being funded by the Federal Ministry for Education and Research (BMBF) to the sum of 238,492 euros, has been ongoing since the end of 2013. It is scheduled to run for 39 months from 1 November 2013 to 31 January 2017. Partners in this joint project are the agricultural enterprise Barnstädt e.G from Saxony-Anhalt, IAMO and the

Centre for Social Research e.V. (ZSH) in Halle at Martin Luther University Halle-Wittenberg. The joint project is being coordinated by ZSH.

Alfa Agrar is combining the practical interests and experiences of an agricultural enterprise with sociological and agricultural economics expertise. Funding by the BMBF is part of the aid scheme "Business competence management in demographic change". The background to the project is that agricultural enterprises are in danger of losing experience over the coming years as an increasing number of older workers retire. At the same time the supply of skilled workers is diminishing. The chief objective of Alfa Agrar is to give agricultural enterprises the ability to safeguard their knowledge base and levels of expertise with the help of foreign skilled workers.

Having the agricultural enterprise Barnstädt on-board as a partner offers a practical opportunity to learn how to develop and test instruments for preserving the supply of skilled agricultural workers. These include a learning module for managers to be developed by IAMO. At the same time IAMO is undertaking empirical studies on the profile and potential of foreign skilled workers in agriculture. The focus here is on Eastern Europe, with which eastern German agriculture traditionally has contacts. Concrete studies on calculating the quantitative and qualitative potential of foreign skilled workers already exist for Bulgaria and Russia. IAMO staff are also surveying the competence expectations of farms and the existing forms of knowledge in livestock farming. In February 2016 a specialist conference will be held at IAMO,

entitled "Agriculture: a career with a future?" More information can be found on the IAMO web site at <http://www.iamo.de/forschung/projekte/details/alfa-agrar/>.

### **Agricultural Restructuring, Water Scarcity and Adaptation to Climate Change in Central Asia: A Five-Country Study (AGRIWANET)**

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In a project funded by the Federal Ministry of Education and Research (BMBF) to the sum of 129,190 euros, and scheduled to last for two years from 1 October 2014 to 30 September 2016, IAMO researchers, together with Martin Luther University Halle-Wittenberg and international partners predominantly from the region under study, are examining the connections between water availability and land cultivation. In the participating countries – Kazakhstan, Kyrgyzsta, Tajikistan, Turkmenistan and Uzbekistan – agriculture is responsible for a substantial share of economic output. As a system of irrigation farming, however, it is acutely affected by climate change in the form of increasing drought. Rivers that cross national borders and conflicts of use between upstream and downstream users have led to considerable political tensions since the dissolution of the Soviet Union.

The AGRIWANET research project, bringing together researchers from all five Central Asian states in an international consortium led by Germany, is compiling an international database on water management and agriculture in the region. AGRIWANET has also allowed us

to compose a focused chronicle of economic and water-related policy measures for all five countries in the post-Soviet period, something that has not been possible before. In April 2015 IAMO held a policy workshop, where for the first time academics from all five countries discussed in Germany the impact of water scarcity and temperature fluctuations on agricultural production and rural incomes. In the workshop, which was moderated by IAMO researchers, the experts discussed their past national experiences of water management. As a follow-up to this event, young academics from the five participating countries came to IAMO for a one-week training course to acquire up-to-date specialist knowledge. More information can be found at the IAMO web site at <http://www.iamo.de/forschung/projekte/details/agriwanet>.

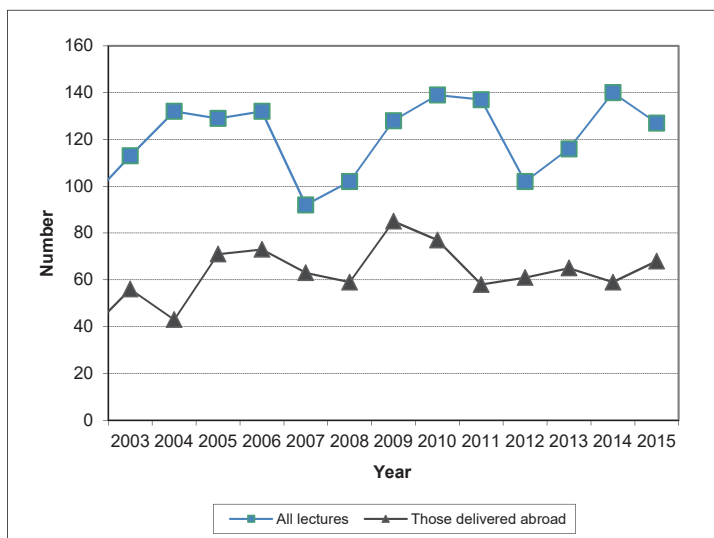
### **IAMO lecture activity**

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Besides publishing their work in journals, another important activity of IAMO staff is the presentation and discussion of research findings at national and international conferences, forums and workshops. A large proportion of lectures by IAMO staff are delivered at international events. In the period 1/1/2015-30/9/2015 the costs of 37 of the 87 lectures given were fully covered by the organisers (15), third parties (20), or other sources (2). There was mixed funding for six lectures, while expenses for 44 lectures were entirely covered by IAMO's budget.



### Development of IAMO lectures



Source: Institute's own statistics.

### Conferences and seminars

Conferences and seminars are essential for IAMO to be able to fulfil its third core task, which is to act as a forum for the exchange of scientific ideas in all questions of agricultural development in transition countries. The events organised by the Institute represent an important platform for scientific exchange, both on a national and international scale. Besides greater academic collaboration, the meeting of academics with decision-makers from the food industry and politics often provides an impetus for restructuring in the agricultural and food sectors in partner countries. Here we should also highlight the fact that in the field of agricultural economics IAMO

makes an important contribution to so-called scientific "capacity building" in research and teaching in our partner countries, and has a crucial role in developing long-term viable networks. Below is an outline of the most important conferences, symposia and workshops – besides the IAMO Forum – held at the Institute from October 2014 to September 2015 inclusive.

#### IAMO international conference on Central Asia

From 24-26 November 2014 IAMO organised an international conference at Halle (Saale) with the title "Regional Economic Cooperation in Central Asia (ReCCA): Agricultural Production and Trade". More than 90 participants,

predominantly from the region, but also from Armenia, Germany and Switzerland, discussed at three plenary sessions and ten parallel sessions the challenges of regional cooperation and of sustainable economic development in the transition countries of Central Asia. This event provided the international guests from various research institutes and organisations, universities and ministries with a platform to discuss the existing problems of the region as well as the possible alternatives and opportunities given better regional economic cooperation. The conference papers presented a broad spectrum of analyses as well as research findings, and developed many potential courses of action for successful agricultural development, improved value chains and the intensification of regional trade and economic cooperation. Discussion of the principal challenges facing agricultural reorganisation in the region included specific topics such as incomplete farm restructuring, insufficient financial mechanisms and an inadequately developed agricultural insurance market, the establishment of agricultural cooperatives, and the collective management of water resources. A key conclusion of the conference was the understanding that new techniques need to be developed in order to apply sustainable practices of water management and land use. Improved market infrastructure as well as the introduction of agricultural extension services and quality-assurance and market-information systems represent important measures for boosting the commercialisation of small farmers in Central Asia. In the opinion of the experts, the export of organic products could help increase the diversification of Central

Asian exports. To strengthen the cooperation and trade between the countries of Central Asia, certain policy measures are urgently required, such as the lifting of export bans, a reduction in time-consuming and costly bureaucratic processes in trade transactions, as well as better cooperation in the transport and communications sectors. Furthermore, the integration of Central Asia into the global economy is seen as the most promising option, both for economic development in the individual countries and for extending cooperation between the states.

The conference was organised by IAMO in conjunction with the Regional Environmental Centre for Central Asia in Kazakhstan, Samarkand State Institute of Agriculture in Uzbekistan and the Kyrgyz National Agrarian University. The organisers were given financial assistance by the German Academic Exchange Service (DAAD), the Fiat Panis Foundation and the City of Halle (Saale).

### **IAMO expert panel at International Green Week 2015**

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More than 150 guests came to the expert panel "Value chain driven development of rural areas in Eastern Europe – Perspectives for food, fuel and fibre" in Berlin on 15 January 2015, organised by IAMO in conjunction with the working group on agriculture of the German Committee on Eastern European Economic Relations (OA). The event was part of the Global Forum for Food and Agriculture 2015 (GFFA), which is held annually as

part of International Green Week under the aegis of the Federal Ministry of Agriculture.

The chair of the working group on agriculture, Thomas Kirchberg, opened the panel. In view of the ongoing political crises, he argued that the key question is how we can free countries such as Ukraine from the predicament of having to choose between Russia and the EU. His suggestion of reviving a Eurasian free-trade zone and creating a common economic area from Lisbon to Vladivostok met with broad agreement amongst the audience. For Kirchberg, the development of value chains was a key factor for the development of rural areas. He was followed by Dietrich Guth, division head in the Federal Ministry of Agriculture. In his welcoming speech he made reference to the German programmes to promote innovation, such as the agricultural policy dialogue with Russia (APD), which has continued unimpeded even during the crisis. He emphasised, however, that the problems in Ukraine could not be solved by politicians responsible for agriculture.

Thomas Herzfeld, member of IAMO's directorate, introduced the topic of the panel. From his perspective as an agricultural economist, the consolidation of value chains, i.e. greater local processing of agricultural products, would bring about the urgently needed economic diversification of rural areas. It would also give hope for greater stability in the face of economic shocks and positive feedback effects. These include stimulating demand, increasing employment opportunities, or higher tax revenues for rural municipalities. All in all, this would raise the attractiveness

of rural areas. The current figures for Russia however, Herzfeld added, still showed a clear negative trade balance for agricultural products. The only export surpluses to be seen were for cereals, as well as for animal and plant oils and fats.

The Russian deputy agriculture minister, Alexander Petrikov, emphasised that agriculture was a strategic sector for Russia. Hence the Russian government had decided to implement a large-scale programme of agricultural development by 2020, with 600 million roubles earmarked for investment. The money would be aimed chiefly at those sectors where there was a large proportion of imports, such as fruit farming, dairy production or beef cattle farming. The minister highlighted the beneficial cooperation with Germany, for example in crop cultivation, training skilled workers or within the agricultural policy dialogue. Since the trade boycott, however, not one single joint investment project had been finalised. On the other hand Russia was represented at International Green Week 2015 for the twenty-first time, with 177 businesses from 17 regions. The minister addressed the current conflict, describing Russia's import embargo as a reaction to EU measures and a necessary response by the Russian government in accordance with WTO rules. The production of domestic goods was being subsidised by the state to raise its market share. The country was dependent on seed imports as seed breeding was insufficiently developed, he said. Tatiana Gubina, managing director of the Russian Association of Potato and Vegetable Growers, established in 2011, confirmed this assertion. Russia was still reliant on seed potatoes from Europe, but it was a stated goal

that production should occur in Russia. There were opportunities for foreign direct investment here, too.

An example of this was provided by Josef Tillmann, managing director of Tönnies Lebensmittel GmbH & Co. KG, which operates not only in Germany, but now has seven pig farms in Russia and, in a vertically integrated approach, also has its own crop cultivation and mixed-feed operations. From his perspective Russia has huge agricultural potential and is in a position, having satisfied domestic demand, to produce for the global market too. A key requirement here, besides the establishment and consolidation of value chains, is the further qualification of workers. As a producer of agricultural goods, Tillmann spoke in favour of reasonable trade relations with Russia.

Vladimir Rakhmanin of the FAO, Assistant Director-General and Regional Representative for Europe and Central Asia, outlined the FAO's engagement in Eastern Europe. He made reference to the FAO's principles in its cooperation with governments, civil society and business. Besides promoting sustainable development, these include support for agricultural producers through the creation of cooperatives, the use of new technology, avoiding agricultural waste and the preservation of genetic diversity. Another perspective on the panel topic was offered by Walter Stinner from the German Biomass Research Centre (DBFZ). He described Russia's great potential for biogas plants. Although the overall numbers of livestock farms had fallen, the producers that now remained were larger as a result. Larger stables and processing companies

produced more agricultural waste material, and thus biogas plants offered a sensible way of making use of this.

By bringing together Russian and German policymakers from politics, business and science, the expert panel "Value chain driven development of rural areas in Eastern Europe – Perspectives for food, fuel and fibre" made it clear that it is in the interest of all sides to continue the dialogue and cooperation between Germany and Russia.

### **Conclusion of the international joint project COMPETE in Brussels**

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The goal of the joint research project COMPETE, which finished in 2015, was to evaluate the competitiveness of European agricultural value chains and analyse the factors that influence this. Amongst other things, the project looked at determinants of competitiveness, such as policy measures, the productivity of agriculture and the food industry, the proper functioning of markets, the organisational form of production processes and innovative activities in food processing. The findings of the project have made it possible to draft more targeted and evidence-based policy recommendations for both the EU and at national level relating to the long-term improvement of food value chains.

IAMO was the coordinator of the COMPETE consortium. This international joint project united the expertise of academics, professional associations, NGOs, agricultural cooperatives, representatives of industry and advisory services from ten countries.

After three years of research, representatives of all 16 project partners from ten countries presented the findings of the COMPETE project on 22 September 2015 at the Saxony-Anhalt representation in Brussels. The policy recommendations for better competitiveness of European food chains on the global and internal market were presented to the European Commission and invited stakeholders at the project's conclusion in an open Final Consultation Workshop. The project partners engaged in discussion with high-ranking political, business and academic representatives, including Henrike Frank, Saxony-Anhalt's representative to the EU, Hans-Joerg Lutzeyer, member of the European Commission and of DG Research & Innovation, and Francesca Bignami of FoodDrink Europe.

"The production of food in the European Union is characterised by big differences in structure, productivity and balance of trade. The European member states will lose further market shares to international competitors if there is no branch compliance and coordinated policy measures," warned COMPETE coordinator Heinrich Hockmann from IAMO. From the COMPETE project, which was funded as part of the European Commission's 7<sup>th</sup> Research Programme, it has been possible to draw policy recommendations for both national and EU level. Some countries require wholesale regulatory reform, especially with regard to their institutional arrangements. The EU's jurisdiction and potential influence in this area are limited, however; the development and implementation of such reform programmes are the responsibility of the Member States. These national political measures ought to follow the principle of subsidiarity. A

comprehensive overview of the project's findings and recommendations appeared in the third COMPETE Policy Brief. The publication is available in English at <http://www.compete-project.eu/policy-brief3.de>.

### **Important events in 2016**

#### **Expert panel on agricultural policy at International Green Week 2016**

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The agricultural policy symposium organised by IAMO in conjunction with the German Committee on Eastern European Economic Relations took place as part of the Global Forum for Food and Agriculture (GFFA) at Green Week 2016 in Berlin. The topic of the GFFA, which was held on 14-16 January 2016, was "How to Feed our Cities? – Agriculture and Rural Areas in an Era of Urbanisation". The host of the GFFA was the Federal Ministry of Food and Agriculture (BMEL). The agricultural policy symposium at GFFA dealt with the topic "Urbanisation, Migration and Structural Change – Challenges and Strategies for Agriculture in Eastern Europe".

The migration of mainly young workers away from rural areas in Eastern Europe is one of the biggest impediments to the development of an efficient, modern agricultural sector, which means that in a number of cases food imports from the west have attained a dominant market position. In view of this, human capital is becoming a key factor for investment and the development of agriculture in transition countries. At the symposium, representatives from politics, business and science discussed options for

breaking the "vicious circle" of an underdeveloped agricultural sector and the lack of attraction of work for young people in rural areas.

### **IAMO Forum 2016**

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In cooperation with the Institute for the Study of Labor (IZA) in Bonn, IAMO is organising the IAMO Forum 2016, entitled "Rural Labor in Transition: Structural Change, Migration and Governance." The conference will take place from 22-24 June 2016 in Halle (Saale). In view of the decreasing significance of agriculture and accelerated urbanisation, rural labour markets in transition countries are currently undergoing major change. Especially in the poorer countries and regions, remittances from migrant workers are playing an increasingly important role in the local rural economy. In many cases the development of the local rural-agricultural economy is being obstructed by a lack of well-qualified young workers. To date, however, many aspects of rural migration processes and labour markets in transition countries have barely been researched. This is where the IAMO Forum 2016 comes in. It is also important to develop lasting strategies for solving rural poverty given a highly mobile working population. Further information about the IAMO Forum 2016 can be found at <http://www.iamo.de/forum/2016>.

### **Publications**

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Academic staff at IAMO publish their research findings in academic journals, monographs, anthologies and

discussion papers. Increasingly they are also communicating them in short Policy Briefs. A complete list of publication can be found on IAMO's web site on the Internet ([www.iamo.de](http://www.iamo.de)).

Pleasingly, the Institute's publication activity has enjoyed a stable development over the period covered by this report. This is particularly true of refereed articles with an impact factor, which are listed on the Science Citation Index (SCI) and the Social Science Citation Index (SSCI). It is clear, therefore, that IAMO's internal quality management for publications continues to be effective.

### **IAMO Policy Briefs**

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Since 2011, IAMO's socially relevant research findings have been published in the occasional IAMO Policy Briefs, which are kept short and written with the non-specialist in mind. They are particularly aimed at politics, business and the media as well as members of the public with an interest in the area. The following IAMO Policy Briefs appeared between October 2014 and September 2015, and can be downloaded free of charge from the IAMO web site (<http://www.iamo.de/publikationen/iamo-policy-briefs/>):

MÖLLERS, J., ARAPI-GJINI, A., XHEMA, S., HERZFELD, T. (2015): Massenflucht aus dem Kosovo: Ein schlingernder Staat verliert seine Bürger, *IAMO Policy Brief No. 24*, Halle (Saale), (auch in Englisch und Albanisch).

ZHANG, Y., GLAUBEN, T., KOPSIDIS, M. (2015): Seeing is learning: Vision care for rural and migrant children in China, *IAMO Policy Brief No. 23*, Halle (Saale).



GLAUBEN, T., GÖTZ, L., KOESTER, U. (2015): Die Rubelkrise und Russlands Exportbeschränkungen für Getreide, *IAMO Policy Brief No. 22*, Halle (Saale), (auch in Englisch und Russisch)

CHATALOVA, L., VALENTINOV, V. (2015): Zivilgesellschaftliche Organisationen auf dem Land: Kein unsichtbarer Dritter, *IAMO Policy Brief No. 21*, Halle (Saale).

### **Studies on the Agricultural and Food Sector in Transition Economies**

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In the series of publications *Studies on the Agricultural and Food Sector in Transition Economies*, IAMO publishes monographs and conference reports dealing with questions of agricultural economics in Central and Eastern Europe,

as well as other transition countries. All publications from volume 22 onwards can be downloaded as pdf files for free from our web site ([www.iamo.de/dok/sr\\_vol###.pdf](http://www.iamo.de/dok/sr_vol###.pdf)). To date 31 conference reports or volumes and 50 monographs have appeared in the series. In 2015, the publications were:

KVARTIUK, V. (2015): Participatory Governance in Rural Development: Evidence from Ukraine, *Studies on the Agricultural and Food Sector in Transition Economies*, Vol. 78, Halle (Saale).

KIMHI, A., LERMAN, Z. (2015): Agricultural Transition in Post-Soviet Europe and Central Asia after 25 Years – International Workshop in honor of Professor Zvi Lerman, *Studies on the Agricultural and Food Sector in Transition Economies*, Vol. 79, Halle (Saale).



PÁLL, Z. (2015): Three essays on the Russian wheat export, *Studies on the Agricultural and Food Sector in Transition Economies*, Vol. 80, Halle (Saale).

OSTERMEYER, A. (2015): Milchproduktion zwischen Pfadabhängigkeit und Pfadbrechung: Partizipative Analysen mit Hilfe des agentenbasierten Modells AgriPoliS, *Studies on the Agricultural and Food Sector in Transition Economies*, Vol. 81, Halle (Saale) (online).

### Research communication

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IAMO not only presents its work to the scientific community for discussion, it also advises the wider public about research findings and current trends in agriculture and the food economy. It provides information tailored for policymakers in business and politics. Besides its media work and the publication of the *IAMO Policy Briefs* and the newsletter, the IAMO press office maintains the Institute's internet presence and organises events.

On 20 November 2014 IAMO celebrated its twenty-year anniversary. Important guests offered their congratulations at the official function, including Dr Reiner Haseloff, Prime Minister of Saxony-Anhalt; Dr Robert Kloos, Federal Deputy Minister for Agriculture; Prof. Dr Udo Sträter, Rector of Martin Luther University Halle-Wittenberg and Dr Bernd Wiegand, Mayor of the City of Halle (Saale). Congratulations were also offered by the President of the Leibniz Association, Prof. Dr Matthias Kleiner. He paid tribute to IAMO, calling it "an ideal Leibniz Institute", which maintains fruitful collaborative relations both inside

and outside of the Leibniz Association, is involved in five Leibniz Research Alliances and is a founder member of the Leibniz ScienceCampus Plant-Based Bioeconomy (WCH) in Halle. The anniversary celebration was concluded by a panel discussion on the topic "Challenges facing the sustainable development of agriculture and the food sector in transition countries". On the panel were: Prof. Dr Johan Swinnen, Professor of Development Economics at the Catholic University of Leuven in Belgium and President of the International Association of Agricultural Economists; Prof. Xiaohua Yu, PhD, Professor of Agricultural Economics in Developing and Transition Countries at Georg August University in Göttingen; and IAMO Director Prof. Dr Thomas Herzfeld. Moderating the discussion was Prof. Dr Stephan von Cramon-Taubadel, agricultural economist at Göttingen. The anniversary celebration was attended by IAMO staff and alumni, as well as representatives from science, politics and business, totalling 200 guests.

From October 2014 to September 2015 there was also a wide range of important events attended by politicians and businesspeople, to which IAMO staff were invited as experts. IAMO Director Prof. Dr Thomas Glauben, for example, gave a lecture as part of the Leibniz series on the topic "Agricultural speculation: Useful or inexcusable?" This event, organised by the Leibniz Association, took place on 30 April 2015 in Berlin. On 2 September 2015 Prof. Dr Alfons Balmann, IAMO Director and head of the Structural Change department, spoke at the DLG 2015 Entrepreneurs Conference in Regensburg on the subject "The land market under the spotlight – Are regulations

necessary?" And on 29 September 2015, at a Parliamentary Evening in Berlin, IAMO Director Prof. Dr Thomas Glauben presented the final project findings and policy recommendations from the international research project COMPETE.

For interested visitors from Halle and the surrounding area, once a year IAMO opens its doors on the Long Night of Science. The Institute is also represented with an expert panel at the Global Forum for Food and Agriculture (GFFA) during International Green Week, as well as at Agritechnica and EuroTier.

Besides events, press releases and publications, such as the Policy Brief and the Newsletter, are of great importance for research communication. All IAMO press releases appear in German and English, some in Russian as well. They are distributed via our own mailing list of just over 500 contacts, the Science Information Service and IAMO's web site. The addressees include the media, ministries, universities and associations. Topics attracting particular attention have been the impact of the Ukraine crisis on agriculture, mass migration from Kosovo, the development of land prices in eastern Germany and the development of milk prices. In the section "IAMO in the media" at [www.iamo.de](http://www.iamo.de), you can view a selection of articles from the popular and industry press.

The *Policy Brief* series, established in 2011, is an occasional publication, short and written with the non-specialist in mind, which outlines socially relevant research findings by IAMO. Since the series began until October 2015, 24 Policy Briefs had been published. The Policy Briefs are

aimed at representatives from politics, business and the media, as well as any interested members of the public. In 2015 four Policy Briefs had appeared by October. The topics covered were mass migration from Kosovo, vision care health programmes in China and their significance for the educational achievement of poor children in rural China, the rouble crisis and Russia's export restrictions for cereals, and the role of civil society organisations in the countryside. The Policy Briefs are published in German, English and some in other languages too, and can be downloaded free of charge at [www.iamo.de](http://www.iamo.de).

The IAMO Newsletter is sent out as an email four times per year to almost 2,000 recipients, including specialists and members of the public, informing them about the Institute's new research projects, IAMO staff research visits, events, awards, successful PhDs and current publications. The Newsletter is available to read in German and English on our web site [www.iamo.de](http://www.iamo.de), where you can also sign up to receive it.

In April 2015 IAMO's completely reconstructed web site went online, providing easier access to information relating to the Institute. The design underwent a thorough overhaul, but the structure and content of the web site were also adapted. Those interested can find out about the Institute's news, events, research projects and publications in German and English at [www.iamo.de](http://www.iamo.de). A variety of publications, such as volumes from the IAMO series "Studies on the Agricultural and Food Sector in Transition Economies", the IAMO Discussion Papers and

Policy Briefs can be viewed free of charge at the web site and are available for download in full. The web site also offers access to the Annual Reports and the IAMO Yearbooks, as well as the Institute's press releases and Newsletters.

For all press and PR related questions please contact Britta Paasche and Daniela Schimming at [presse@iamo.de](mailto:presse@iamo.de).

## How to find us

### » by car

**From the south:** Leave the A9 motorway at the Rippachtal junction, and take the A38 towards Merseburg. At the Halle-Süd triangle change onto the A143 and follow this road until the Halle-Neustadt/Halle-Zentrum exit. Then take the B80 for about 8km towards Halle until you get to Rennbahnkreuz. At the entrance into town get into the left-hand lane and go straight on along the B80 towards Kröllwitz/Universität. Turn left at the ice-rink and follow Blücherstraße to the end. Then turn right. At the end of the avenue turn left into Theodor-Lieser-Straße. IAMO is in the building on the right-hand side.

**From the north:** Take the A9 motorway (Berlin-Munich) as far as Halle/Brehna. Follow the B100 towards Halle until you reach the outskirts of the city (traffic lights at Dessauer Brücke). Get into the right-hand lane and turn left, still on the B100 to Zentrum and Magdeburg. Turn right immediately into the B6 towards Magdeburg and then take the next exit (Zoo, Wolfensteinstraße). Carry on along Wolfensteinstraße (underpass, several traffic lights, Reilstraße/Große Brunnenstraße crossing) until you reach Burgstraße. Turn right and take the next available left turning over Saalebrücke. Once over this bridge take the first right turning, drive back under the bridge and continue along the embankment of the Saale. Turn left at the next crossroads into Weinbergweg towards Universität, and follow the road until the next set of lights. Continue straight ahead into Walter-Hülse-Straße. The IAMO building is on the right-hand side. Turn right into Theodor-Lieser-Straße and IAMO is now in front of you.

**From the north-west:** Coming from Magdeburg take the A14 (direction Leipzig or Dresden) to the Halle-Peißen exit, then take the B100 to Halle. See "From the north" for further directions.

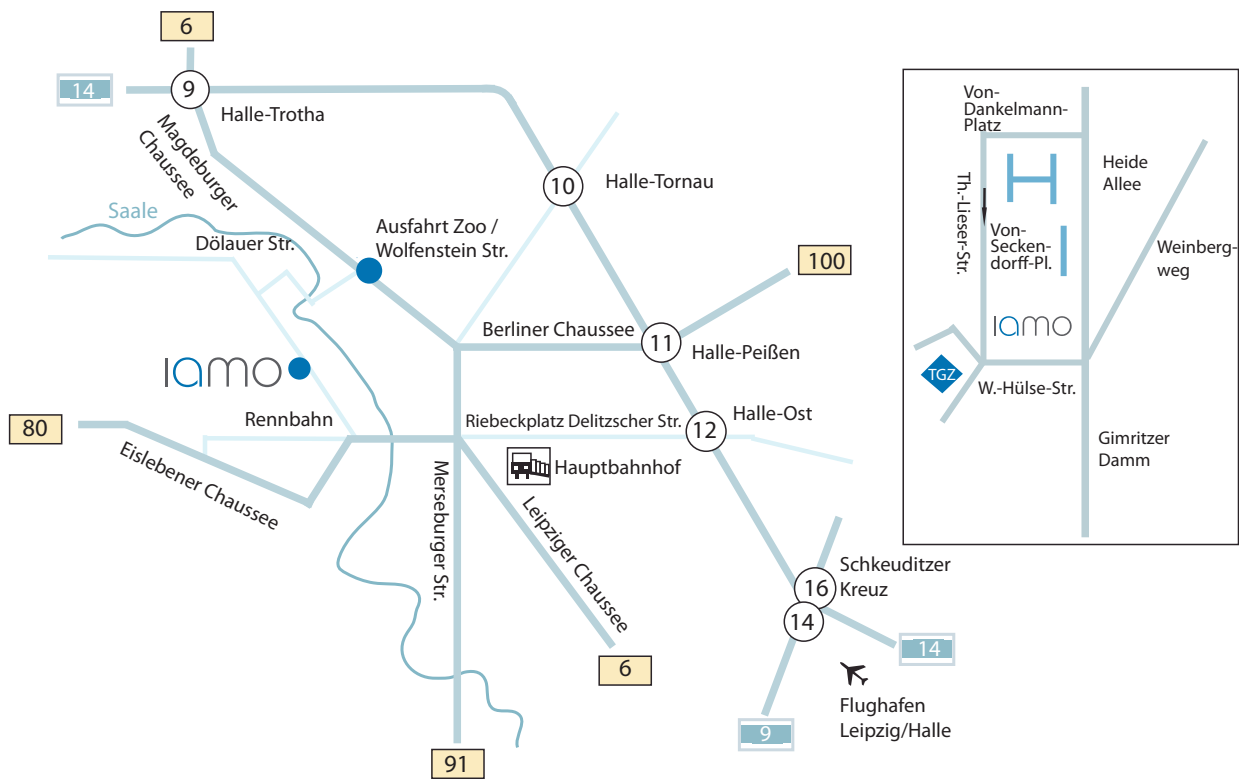
**From the west (on the B80):** Follow the B80 until the Rennbahnkreuz. At the entrance into town get into the left-hand lane and continue along the B80 towards Kröllwitz/Universität. Turn left at the ice-rink and follow Blücherstraße to the end. Then turn right. At the end of the avenue turn left into Theodor-Lieser-Straße. IAMO is in the building on the right-hand side.

### » by train

Leave the station by the main exit and follow signs to the tram stop "Riebeckplatz/Hauptbahnhof". From here take tram number 4 towards Kröllwitz. Alight at the Weinberg Campus stop (about 15 minutes from the station). The Institute is on the left-hand side of the road as you get out.

### » by plane

Leipzig-Halle airport is 20km from Halle. A regular shuttle train takes you to the main station. See "By train" to find the way from there.





## Publisher's note

IAMO's publications also include the series of in-house *Discussion Papers*, the series *Studies on the Food Sector in Transition Economies*, and the *Institute's Annual Report*.

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