

Medium-term agenda 2023 – 2030

(4th revised draft, September 2022)

Since its foundation in 1994, the Leibniz Institute of Agricultural Development in Transition Economies (IAMO) has developed into an internationally recognised institution that provides scientific support for the transformation processes of the agri-food economy, particularly in the formerly planned economies of Europe and Asia. This regional and thematic focus will continue to be of central importance for the further development and profiling of the institution. Since the evaluation by the Leibniz Senate in 2015, which also highlighted the remarkable and essential thematic and methodological breadth, IAMO has once again grown significantly; it has considerably expanded its activities in internationally-oriented support of early-career researchers and knowledge transfer, among others, and has further increased its international visibility. The present medium-term concept builds on this and forms the basis for the further development of the institute's research, transfer and qualification tasks for the coming years. The identification of relevant research and transfer areas of IAMO is oriented towards the societal challenges of sustainable development that are particularly relevant for rural areas and the agri-food sector of the former planned economies in Europe and Central Asia as well as in China against the background of the different transformation processes as well as geopolitical developments and events. IAMO's activities focus on the **design of suitable regulatory frameworks and institutions**, the **development of resilient agricultural systems**, the **reduction of and adaptation to environmental risks**, the **sustainable rural livelihoods and migration**, the **securing of the world's food supply and competitive supply chains**, and the **diffusion of innovations and knowledge**.

1 Introduction

With the mid-term agenda 2023-2030, IAMO sets a framework for its tasks and identifies future priorities. It is based on the institute's statutes, the long-term research plan specified in 1997¹, and its mission statement² and follows the previous medium-term agenda (2016-2022). Following its statutory mandate, IAMO is dedicated to basic and applied research on the **international agri-food sector and rural development, particularly in the former centrally planned economies of Europe and Asia**. Due to its primarily socio-economic perspective on the issues of the focus region under consideration and their interactions, IAMO has a unique selling point both nationally and internationally.

In this respect, following its statutory mission, the institute understands transformation research as the continuous research and monitoring of socio-economic developments and processes of change, whether gradual or disruptive, in the agri-food economy and rural areas of the formerly planned economies of Europe and Asia. Following the orientation of its academic departments (cf. chapter 5), this is done from a political-institutional, market- and trade-related, and entrepreneurial-structural perspective.

¹ Institute for Agricultural Development in Central and Eastern Europe: Research programme of the Institute for Agricultural Development in Central and Eastern Europe (IAMO). Halle, 1997, pp. 5-19.

² Leibniz-Institute for Agricultural Development in Transition Economies: Mission statement, 2021

Since the fall of the Berlin Wall three decades ago, the regions under consideration have developed very differently. As predicted at the beginning, the establishment of market economies based on the Western model has only been observed in some countries. This also applies to the agri-food sector and the agriculturally dominated rural areas. At the same time, new national, regional and international developments have influenced the process. In this respect, the countries show high heterogeneity and specific scientific, (agricultural) economic and institutional framework conditions (cf. Chapters 2 and 3). The institute's work focuses on explaining and assessing agricultural and rural developments, economic statuses achieved, and trends. In particular, the analyses focus on the role of (agricultural) political, institutional, technological and structural factors, including expected future changes. These also consider, among other things, transformation-specific phenomena (such as path dependencies), persistent environments (such as infrastructure deficits), emergent phenomena (such as dualistic agricultural structures), natural starting conditions (such as production/trade potentials) or region-specific preferences (such as typical consumption patterns). In addition, system-theoretical studies are devoted to overlapping the change from planned to market economies towards a more robust anchoring of societal demands in market-economy processes (cf. chapters 3 and 4). In summary, using central socio-economic theories and methods, the institute offers science-based findings for the classification and evaluation of agricultural entrepreneurial strategies and structures, market and trade relations or agricultural policy measures against the backdrop of past developments and starting positions, developmental states achieved, future expectations as well as unique regional and global challenges.

The research results are primarily addressed to the international scientific community (*research mandate*). IAMO provides theory and evidence-based decision-making support and promotes dialogue and interaction between science, society, policy and business (*transfer mandate*). It supports the qualification of researchers and the development of scientific capacities, particularly in the partner countries (*qualification mandate*).

The medium-term agenda is drafted every 7-8 years. It enables the institute to concretise its priorities and adapt them to current developments and events. Identifying a research programme that programmatically bundles relevant and promising thematic complexes is of central importance. These serve as guidelines for the institute and ensure IAMO's research profile sharpening. At the same time, the thematic complexes support a **cross-departmental nexus** of theoretical and methodological knowledge as well as country experience. The mid-term agenda is sufficiently open to meet new research challenges at short notice. Thus, at the time of the adoption of this medium-term concept, there are particular challenges and uncertainties for further research cooperation with Russia, Belarus and Ukraine. At the same time, prospects for cooperation with countries in the Western Balkans have recently opened up.

Building on the successful work of the past years, the present medium-term agenda for the period 2023 to 2030 also follows the subsequent fundamental strategic guidelines corresponding to those of the Leibniz Association:

- academic originality and societal relevance of the research programme,
- pronounced trans- and international interaction in research, advanced education and outreach, including the development of supporting infrastructure in the regions under consideration,
- active exchange with society, policy and business at the international level,
- cooperation with universities as strategic partners,

- interdisciplinary cooperation with Leibniz institutes and in other networks,
- equal opportunities, diversity, and a family- and life-cycle-conscious work culture.

At the same time, the concept is oriented toward the successful development of the institute and its particular competencies. It, thus, builds on the experience and central results of its previous research, further education and transfer activities. In detail, the following points can be emphasised as examples³:

- Providing **critical scientific contributions** to understanding agricultural policy processes, the organisation and management of farming enterprises, agri-structural processes, the coordination and efficiency of markets and value chains, the use of natural resources and the development of rural areas regarding the central regions under consideration. These are recognised in the international scientific community, not least through extensive publications in prestigious journals.
- Creating and participating in **diverse transfer and dialogue formats** with business and politics as well as establishing innovative long-term (research) infrastructures in and for the focus regions. This is reflected, among other things, in the high level of awareness in the target countries and Germany.
- Successfully implementing **academic training and capacity development**, especially for early-career researchers from the countries under consideration or at the international level. This is also reflected in a large number of completed and ongoing doctorates, the systematic implementation of teaching and capacity development events in the region as well as the awarding of scholarships for research stays at IAMO.
- Establishing a pervasive **international research and cooperation network** concerning regional, professional and methodological cooperation.
- Continuously developing a comprehensive and **unique data and information base** as well as the necessary **further development of theories and research methods**.

In summary, this reflects the institute's **particular relevance and unique position in the international research landscape and the Leibniz Association** in the context of its specific challenges (cf. Chapter 3).⁴

The list from the targeted interaction of regional focus and technical and methodological competencies, coupled with a distinctive international (cooperation) network of research institutions, universities, organisations and representatives from politics and business. Lastly, the richness and comprehensiveness of IAMO's expertise, including in interdisciplinary and transdisciplinary contexts, allows the institute a high degree of connectivity with the scientific community.

The overarching goal in the context of the medium-term programme is accordingly to maintain and further strengthen IAMO's prominent position, i.e. the "IAMO brand", as a central research institute for the scientifically sophisticated analysis and monitoring of agricultural transformation processes of former planned economies in Europe and Asia in an international context in the global research

³ Details can be found in the (bi-)annual reports, the annual reports and the programme budgets of the institute, which are regularly submitted to the funding bodies. Furthermore, individual results can be found in various publications, such as the quarterly IAMO Newsletter.

⁴ With its research competencies and topics, IAMO has a unique position both nationally and internationally, even if there is thematic proximity to other institutions in particular domains. Nationally, ATB, ZALF and JKI, for example, view certain topics from a natural science and engineering perspective. Some Thünen Institutes also conduct socio-economic research and, as research institution subordinated the ministry, focus on scientific decision support for the Federal Ministry of Food and Agriculture (BMEL). ZEF focuses more on the Global South. Internationally, there are links above all to IFPRI, although its focus is also on the Global South and less on Eastern Europe and Central Asia.

landscape.

2. Development of the mid-term programme

The thematic development of the research programme takes place in a coordinated “bottom-up” process. At the level of the three scientific departments with their content-related, theoretical and methodological competencies, promising research needs are identified decentrally. This considers country-specific and international developments, challenges and objectives such as the United Nations Sustainable Development Goals. Finally, these needs are compared with the possible lines of development of the departmental profiles. Within the framework of IAMO’s Research Coordination Group (KoFo), the thematic complexes that guide the medium-term research programme across departments are formulated following the identified research needs and department profiles. In addition to the scientific department heads, the KoFo includes two scientific staff members and IAMO’s third-party funding manager. The research programme is coordinated with the institute’s supervisory bodies, namely the Foundation Board and the Scientific Advisory Board.

In general, particular challenges for research and the closely related outreach and qualification activities (cf. also Section 6 and IAMO Transfer Concept 2021) arise from the international orientation of the institute, primarily through the focus on European and Asian transition economies. Firstly, IAMO’s programme has to consider the heterogeneity of many different nations, with their specific scientific, cultural, (agricultural) economic and political backgrounds and framework conditions. This requires particular competencies and strategies and a distinct understanding of the different contexts on site, especially in exchange and dialogue with actors from academia and the non-academic sector. Secondly, the standard of research and education in the disciplines covered by IAMO in many partner regions still does not meet current international standards. Finally, obtaining information and data often requires considerably more effort than in Germany, for example. The institute has exclusive opportunities to gain research-based knowledge about and with these regions through its close connections in the partner countries.

The insights gained are not only of considerable importance for the target countries but are also addressed to the international scientific community as well as to policy, business and society in Germany, the EU and other world regions. This is all the truer because developments are taking place in the regions under consideration that not only have an impact on Germany and the EU, for example but can also offer clues to possible solutions for challenges in other regions. This is not the least due to the diverse economic connections between the individual nations.

Finally, the institute also contributes to international understanding by promoting dialogue and the exchange of experience between Germany and the partner countries as well as between the partner countries themselves, thus promoting a balance of interests.

3. Background of the research programme and central thematic complexes

Research and knowledge transfer on the development of agricultural sectors and rural areas in transition economies are characterised by the considerable need for expertise, both scientific and societal, on living conditions and (agricultural) economic development processes in those countries,

the careful use of natural resources, and the supply of safe and healthy food for their own and world's population. This need for knowledge is part of a series of scientifically and socio-politically relevant topics currently shaping the international and European research area and will continue to do so in the future. The United Nations Sustainable Development Goals (SDGs) are one example whose achievement requires enormous knowledge gains and their transfer into society.

IAMO's research programme is oriented towards this need for knowledge. The leitmotif of the research portfolio is to **identify ways of promoting modern food systems and shaping prosperous rural areas in transformation-specific contexts.**

Reconciling economic prosperity, environmental sustainability, changing consumer demands and societal expectations, and further modernising the food sector require considerable effort and a high degree of adaptability from the food sectors worldwide. The transforming economies of East and Southeast Europe, Central Asia and China are not only confronted with specific (agricultural) economic and ecological challenges and risks. At the same time, despite considerable progress in some cases, they still offer substantial opportunities to develop towards a modern, efficient and sustainable agri-food economy as well as prosperous rural areas. Both are becoming increasingly important on a global scale.

In a globalised world, almost all countries are affected by international events, including IAMO's target regions. Conversely, agricultural developments in the transition economies of Europe and Asia influence numerous international developments, especially as this region has risen to become an "agricultural giant" at the global level during the last two decades. The region is home to about 20 per cent of the world's population, accounts for 25 per cent of the world's agricultural land, is responsible for 35 per cent of global agricultural production and conducts over 20 per cent of international trade in agricultural commodities and food. The countries of the Black Sea region are now essential grain suppliers for countries in the Global South, where demand continues to grow strongly. Disruptions such as the Russian attack on Ukraine in spring 2022 will undoubtedly have a global impact, the consequences of which for international food security as well as for the shaping of international value chains will probably be considerable. In particular, China's agricultural imports have risen massively in recent decades and are increasingly influencing international trade structures. In addition, new global value chains are emerging, for example, along the expanding land and sea transport networks of China's Belt and Road Initiative, which also include the countries of Central Asia. Thus, agricultural and economic developments in the transformer countries of Europe and Asia have direct and indirect global implications.

The transition economies of Europe and Asia, especially the large territorial states such as Russia, Ukraine, and Kazakhstan, but also China, are characterised by very different agricultural structures, ranging from micro-enterprises to transnational agricultural corporations as well as by traditional to high-tech-based management models. This is accompanied by considerable differences in productivity growth, trade linkages and environmental impacts. At the same time, the imperatives of biodiversity, climate and environmental protection set limits to land expansion and the intensity of its use. In addition to the need for further implementation of organisational-technical progress, increasing demand for skilled labour and the need to overcome structural and market-related deficits, environmental changes such as climate change and worsening water scarcity are key challenges for ensuring competitiveness and agricultural growth. Reducing environmental costs and adapting to environmental changes while ensuring efficient production and an adequate standard of living in rural regions represent huge challenges for the agricultural sector.

At the same time, many rural areas still lack suitable employment opportunities and public infrastructure (e.g. education and health services, transport and communication networks, counselling services). This is compounded by specific mobility constraints for the rural population. In many places, therefore, the marginalisation of rural areas, poverty and inequality between rural and urban areas have increased. Rural households become more vulnerable to external shocks, including natural hazards, climate change, and employment risks. But rural economies also face a vicious cycle of depopulation, ageing, and the dangers of declining living standards and social cohesion. These trends also make it difficult to secure the skilled labour needs of increasingly technology-based agriculture. In contrast, rural areas with good connections to prosperous urban regions with a growing urban middle class are again experiencing increasing appreciation of business locations, cultural, and recreational areas. They increasingly secure a value-added sustainable food supply and serve as a living space.

A central prerequisite for competitive and sustainable agricultural development and the (re)vitalisation of rural areas characterised by agriculture is the design of suitable regulatory and procedural framework conditions and institutions. Efficient institutional arrangements also serve to balance the interests of the different actors in the food sector and related areas, from the various stages of production to trade, consumption and society as a whole. As is well known, the different reforms of the past three decades have led to a considerable heterogeneity of (agricultural) policy frameworks and institutional arrangements. While some countries have successfully established market-based regulatory frameworks and social protection systems, many still have deficits, not least in preventing corruption. These include, for example, inefficient land and labour markets as well as inhibited access to innovative technologies, high-quality means of production and capital or supra-regional or international markets. Last but not least, the agricultural-oriented higher education and research landscape also require (research) policy reforms.

Successfully shaping globally competitive and sustainable food economies and prosperous rural areas will depend more and more on the use of organisational-technological innovations. Innovations, be they gradual or system-oriented, are known to be a motor for economic and social development. This also applies unreservedly to the formerly planned economies in Europe and Asia. Closely linked to this is the (further) development of bio-economically oriented clusters and networks that offer innovative potential in the agricultural sector in combination with other biological resources. At the same time, it is hoped that digital technologies will facilitate the integration of the primarily marginalised rural population in the region under consideration into labour markets and public and private infrastructure. While many digital solutions are technically mature and available, the central challenge in the food economy is their (socio-)economically sensible use, their institutional and infrastructural requirements as well as their acceptance. Furthermore, there still seems to be considerable resentment in large parts of the population, both in the region under consideration and in important export destinations, regarding biotechnological processes, such as new breeding technologies in food production. Accordingly, it is expected that an improved understanding will favour the acceptance, adaptation and diffusion of innovative technologies and thus be decisive for developing the agri-food sectors in the region under consideration.

Based on these exemplarily outlined regional and global developments and challenges of IAMO's central countries of observation, a diverse need for research arises. It encompasses entrepreneurial, sectoral, market-related, social, political, geographical, ecological, historical and ethical questions, the answers to which require a broad spectrum of theoretical and methodological competencies from

various disciplines as well as cross-disciplinary approaches. This also applies to the research and knowledge transfer design with regard to diverse content-related references. Against this background, the following six central thematic complexes can be identified in the future research programme, whose research will mainly contribute to overcoming (agricultural) economic, social and ecological challenges. The thematic complexes are closely interlinked and cannot be strictly separated from each other:

- Designing appropriate regulatory frameworks and institutions,
- Creating resilient agricultural systems,
- Reduction of and adaptation to environmental risk,
- Fostering sustainable rural livelihoods in the age of migration,
- Securing the world's food supply and competitive supply chains,
- Diffusion of innovations and knowledge.

4. Outline of the six central thematic complexes

A. Designing appropriate regulatory frameworks and institutions

The experiences of the former centrally planned economies of Europe and Asia, which have chosen different paths of economic and political reform, provide a particularly rich illustration of this. As might be expected, the very different reforms, either by design or by virtue of their implementation, led to a remarkable heterogeneity of governance systems for farmers, businesses, consumers and the rural population. This applies both to the regulatory framework, such as labour market constitutions, and to more process-oriented measures, for example concerning access to new technologies, capital and knowledge resources or to supra-regional or international markets and geo-economic questions.

Economic phenomena are influenced by their social, political and cultural context. An important prerequisite for competitive food economies and the vitalisation of rural areas is the design of appropriate political and institutional frameworks. As is well known, a simple, supposedly "one-size-fits-all" design of suitable institutions for all nations and regions offers little orientation; rather these must be designed against the background of the respective very diverse cultural, historical and social contexts. This raises the question of **which policies and formal or informal institutions contribute more effectively and efficiently to sustainable development and the improvement of economic power and living conditions.**

On the one hand, the work within this thematic complex aims at monitoring and evaluate the consequences of macroeconomic, trade, agricultural and food policy measures for the development of agri-food sectors and rural areas. On the other hand, driving forces and decision-making processes with regard to the emergence and implementation of reforms and measures are examined, whereby processes of interest articulation are also to be discussed. Specifically, this includes, inter alia, the evaluation of agricultural subsidies, the state of the land market, trade policies or food programmes. The normative discussion of suitable regulations, for example with regard to access to water as a resource, as well as analyses of the adaptation behaviour of actors in the agricultural and food sector also play a central role. In this context, public discourses of interest groups and their social opinion formation are also examined.

B. Creating resilient agricultural systems

Agricultural systems of the transition economies are not only characterised by very heterogeneous structures and enterprise models but also show great differences in their performance and their capabilities to deal with emerging challenges. In many of these countries, the enterprise models cover a range from household farms to group-like structures. Often agricultural enterprises are affected by restrictions and risks that limit their chances of economic success and thus their competitiveness, especially on a global scale. These include, for example, limited access to capital markets, restrictive land markets, suboptimal management strategies, underdeveloped transport and advisory infrastructures as well as partially limited integration into international supply chains. These include, for example, limited access to capital markets, limited functioning land markets, a lack of skilled labour, underdeveloped transport, training and advisory infrastructures, and partly limited integration into national and international supply chains. Changes in agricultural structures are often subject to path dependencies. Of increasing importance for companies, supply chains and agricultural structures are strategies for adapting to climate change and climate protection, as well as for securing social acceptance, for example with regard to social and ecological concerns. On the other hand, agricultural enterprises in the region can point to considerable progress that can also serve as an example for other countries. One example of this is the successful implementation of digital technologies in the agro-holdings of various countries bordering the Black Sea or even in small Chinese farms.

Based on the considerable agricultural potential in the regions under consideration, with growing global demand for food, increasing environmental restrictions and changing social perceptions, this thematic complex is dedicated to the **sustainable design of efficient and resilient agricultural systems**. The main focus is on the primary agricultural sector and thus on the business and agricultural structural level, which increasingly has to balance economic, ecological and social requirements. At the same time, consequences and design potentials for upstream and downstream sectors are identified.

Specifically, this thematic complex is dedicated to the analysis of entrepreneurial strategies and success factors, with a focus on agricultural mega-companies (agro-holdings), which play a significant role, especially in Ukraine, Russia, Kazakhstan and animal husbandry in China. However, the economically and ecologically sustainable development of small-scale agricultural structures, such as those found in large parts of South-Eastern Europe and China, is also the subject of the work. The identification of productivity and efficiency potentials of both large and small farms as well as suitable land use systems is also a central concern of the department. Studies on specific decision problems, such as employment and cooperation decisions, including integration into supply chains, or on risk management of agricultural enterprises are also the subject of the department. Another focus is the understanding of agricultural structural characteristics and processes, such as the sometimes intense local competition on the respective land markets, dualistic structures and the path dependency of agricultural structural change, as well as the resulting implications for the resilience of the respective agricultural systems with regard to their ability to guarantee the social functions of agriculture. Finally, strategies for balancing entrepreneurial, social and ecological goals of the respective production systems are discussed.

C. Reduction of and adaptation to environmental risks

IAMO's region of observation is facing particularly strong environmental changes. The Eurasian steppes, stretching from China through Central Asia and Russia to Hungary, are a hotspot of climate change with significantly higher warming than the global terrestrial average. At the same time, extreme

weather events are observed with great regularity, for example in Central Asia. Rapidly changing climatic conditions are already affecting agricultural productivity and water availability. Less sustainable land use practices and the survival of centrally planned economic governance contribute to severe land degradation with negative consequences for production and livelihoods. In many regions, production processes rely on surface water irrigation, but water availability is declining and water supply becomes more volatile. At the same time, strategies for mitigation and adaptation to extreme weather events are often poorly developed so far. Worryingly, many changes that can be seen today are likely to aggravate, while the affected population is bound to grow and become more vulnerable to the changes.

Climate change, threats to biodiversity, increasing water scarcity and nutrient overload, as well as the degradation of soil resources, can be partly caused by agricultural practices. Notwithstanding, agriculture, its downstream sectors and even consumers are directly or indirectly affected by these developments. Against this background, work in this thematic complex aims, **on the one hand, at approaches to reduce the ecological footprint through resource-saving production processes and, on the other hand, at measures to strengthen resilience as well as to hedge against environmental risks.** Contributions in this thematic complex generally aim at a deeper understanding of socio-economic and ecological effects and dynamics in the context of environmental risks on different spatial and temporal scales. This includes analyses of land use changes and environmental impacts as well as the development of sustainable land use options. Furthermore, impacts of climate change on yield potentials and trade activities are assessed and suitable institutions for sustainable management of water, especially in arid regions, are developed. Finally, strategies for hedging against environmental risks, especially climate risks, play a central role, such as agricultural insurances or possibilities for financing risk instruments.

D. Fostering sustainable rural livelihoods in the age of migration

Rural areas in many transition countries are threatened by a vicious circle of rural exodus, ageing, and a decline in economic activity and living standards. Underdeveloped public infrastructures (health, education, public transport), declining employment opportunities, limited leisure and shopping facilities and an increasing discrepancy with urban centres are driving this process. The risk of poverty and vulnerability to external shocks such as weather events, climate change or economic downturns are increasing. These trends are particularly pronounced in countries where metropolises such as Moscow, Beijing, Kyiv or Belgrade act like a magnet for the younger generations as well as for entrepreneurial activities.

Against the backdrop of rapidly increasing urbanisation accompanied by the emptying and economic as well as social marginalisation of rural areas in the transition countries of Europe and Asia, the **opportunities and risks of the economic and social revitalisation of rural areas** are at the forefront of this thematic complex. This topic is at the top of the (political) agendas of many transition countries such as China, Ukraine, Russia or the states of South-Eastern Europe. Therefore, potentials and strategies must be identified that create sustainable employment opportunities and favour the economic situation and life satisfaction of rural households through the creation of suitable institutions and infrastructures.

The work within this thematic complex aims, among other things, at the question of which factors bind people to their rural place of residence and work, the evaluation of the quality of life and work in agriculture and in rural areas, the forms and intensity of rural-urban interactions, the development possibilities of rural growth poles and non-agricultural employment. Of interest here are decentralised

design and organisational mechanisms, in which agricultural cooperatives can play an important role. The focus is also on questions of labour mobility and migration, such as South-Eastern European and Central Asian migration movements. International migration is at the centre of the work, especially with regard to possible development potential through international remittances and returnees. In addition, the thematic complex also deals on a methodological level with more in-depth analyses of the quality of life and job satisfaction in agricultural areas of the region under consideration, whereby the development of a new type of index for measuring rural life satisfaction is planned.

E. Securing the world's food supply and competitive supply chains

Over the past few years, countries in the Black Sea region such as Russia, Ukraine, Kazakhstan and Romania have been able to significantly increase their grain production through modern technologies and business models and have thus advanced to become the most important suppliers for countries with strongly increasing demand in the Middle East, Southeast Asia and Africa. But China is also one of the largest agricultural trading nations on both the supply and demand sides. At the same time, globally oriented supply chains are playing an increasingly important role in the international exchange of goods. Furthermore, not least as a result of rising incomes and diet-related diseases, quality demands and awareness of a diverse and health-conscious diet are increasing in the regions under consideration. Often, however, access to this is only sufficiently ensured in urban centres or for higher-income groups. Based on the increasing importance of the transition countries of Europe and Asia for the global food economy, this thematic complex aims at **suitable strategies for global and regional food security**. On the one hand, the topic focuses on the role of global and regional supply chains as well as business relationships for food security at the national and international level, whereby sustainability aspects as well as local and global risks in trade are also considered. At the same time, it is important to examine ways of meeting the increased nutritional awareness of many population groups.

Accordingly, research focuses on the growth, competitiveness and stability of trade relations, such as grain and meat products of the Black Sea region or, for example, agricultural supply chains of the Western Balkan countries. The role of foreign direct investment, hedging strategies of price and supply risks on international futures markets as well as the design of suitable logistics infrastructures or the discussion of bi-/multilateral trade agreements are also considered. Other studies deal with consumer demand and the development of suitable retail formats, especially with regard to health-related nutritional offers, for example in China or Southeast Europe. Finally, analyses are devoted to the trade and business linkages between the countries of the region under consideration as well as their most important suppliers or recipients of agricultural raw materials and foodstuffs.

F. Diffusion of innovations and knowledge

Digital technologies, newer methods in plant breeding and developments in bioeconomic processes promise modernisation thrusts along the supply chains from production to the consumer. This means that (further) improvements in the economic and ecological efficiency of agricultural value chains can be expected. This is particularly true for many transition countries, where on the one hand there are still considerable technologically induced yield gaps, but on the other hand, some countries are already considered to be pioneers of digitalisation. In addition, digital technologies can promote the integration of rural population groups into labour markets and service infrastructures. Although many digital and biotechnological and economic processes are already technically mature, there is so far little evidence-based knowledge about their opportunities and risks in practice from a (socio-

)economic, ecological and ethical perspective. Furthermore, in large parts of the population of the regions under consideration, there are still considerable reservations and uncertainties regarding the application of some of these technologies and processes. Further insights into the economic opportunities and risks of innovative technologies, their diffusion and the associated social discourses are therefore important for the further development of agricultural and food management practices in the target region.

In view of the considerable progress in the field of digitalisation or bio-economic processes, which are also of considerable importance for agricultural developments in Eastern Europe, Central Asia and China and their competitiveness,⁵ the topics of this area are dedicated to **suitable economic strategies as well as the socio-economic and ecological consequences of the adaptation and diffusion of innovative technologies** in the agri-food economy.

Accordingly, the work in this thematic complex is based on (socio-)economic concepts and methods of operational, market-oriented and institutional analysis of innovation processes in the agricultural and food economy of the region under consideration. In concrete terms, studies deal, for example, with the acceptance of new technologies as well as the adoption and socio-economic consequences of digital processes both at the level of agricultural production, along supply and trade chains or at the interface between retail and consumption. Among other things, new possibilities in the operational and supply chain-related management of production processes are being investigated, and the efficiency of modern communication and information processes (e.g. apps, drones and satellite-based information) is being tested, for example for risk management or for land use decisions. Furthermore, the research focuses on the use of blockchains (data portals) and artificial intelligence for the coordination of value chains as well as on the influence of social media on consumer decisions, for example in Southeast Europe or China. Other studies are dedicated to the development of bio-economically oriented clusters and networks as well as the transformation and transnational diffusion of agricultural knowledge and innovation systems (AKIS).

5. Outline of department profiles and interdepartmental networks

The thematic complexes identified above will be addressed by activities within the three scientific departments and cross-departmental units such as the three regionally oriented and institutionally established research groups on China, Southeast Europe and Central Asia. **In essence, the six thematic complexes mentioned are dealt with from a political-institutional (Agricultural Policy Department), a market (Agricultural Markets Department) and an entrepreneurial-structural (Structural Change Department) perspective in accordance with the respective department profiles** (see below). The departments see themselves as competence centres that develop and provide the methodological-theoretical as well as content-related and regional competencies and thus the necessary human capital for working on the six thematic complexes. Representatives from the individual departments meet regularly in the Research Coordination Group and reflect on the thematic orientation in order to promote interdepartmental exchange and further development.

The profiles and competencies of the departments Agricultural Policy, Agricultural Markets and Structural Change complement each other and are complementary in research, qualification of early-

⁵ This is reflected not least in the choice of topics in a number of the BMEL's international dialogue projects (BKP projects), such as the Agricultural Policy Dialogue with Ukraine (APD-Ukraine), the German-Chinese Agricultural Centre (DCZ) or the Technical Dialogue Western Balkans and Mongolia. Questions of digitalisation or agricultural knowledge and information systems (AKIS) play a prominent role in these topics.

career scientists and evidence-based knowledge transfer through national and international research networks and other forms of cooperation.

A. Department Agricultural Policy

The Agricultural Policy Department studies the institutional environment of agricultural and rural development in transition economies. Changes in this institutional and political environment are monitored, effects on the actions of the players in the given organisational framework are analysed, and the agricultural policy instruments are evaluated. The scientific analyses focus primarily on the perspective of the active actors such as farmers, rural households or regulators. Firstly, they involve the evaluation of agricultural and trade policy measures with regard to their effects on farmers and consumers as well as agri-business. Secondly, the various effects that institutional reforms, social upheavals and decisions within households have on living conditions in rural areas and on agricultural production are identified and analysed. A third important aspect is the effects of the institutional framework on the use of soil and water in agriculture. The department's research work is empirically oriented and based primarily on methodological competencies in microeconomic modelling, but utilises qualitative methods as well. Research activities of the department focus on a regional dimension of the countries of the Western Balkan, Central Asia, China, Russia, and Ukraine.

Based on these research directions and competencies, the department contributes particularly to the thematic complexes *“Creating resilient agricultural systems”*, *“Designing appropriate regulatory frameworks and institutions”* as well as *“Fostering sustainable rural livelihoods in the age of migration”*.

B. Department Agricultural Markets

The Agricultural Markets Department focuses on the performance and competitiveness of markets, supply chains and (international) trade relations in the food economies of European and Asian transition countries. The work programme offers a close link between research, academic capacity building and interaction with business and policy. Firstly, “classical” analyses of market developments, price formation processes and trade structures, especially in the agricultural commodity markets of the Black Sea region, are dealt with. Secondly, studies aim at the competitiveness of regional and global value chains as well as at changes in consumption patterns. One focus is on the opportunities of using digital technologies to coordinate value chains in different regions of Eastern Europe and the Western Balkans, and on ways to improve health-related diets, for example in China. Thirdly, the work programme is dedicated to the management of entrepreneurial and market-related risks and potentials. In particular, activities are aimed at the development and market introduction of index-based weather insurance in Central Asia and Mongolia on the one hand, and at questions of hedging price risks on the major European, US-American and Chinese futures exchanges on the other. Finally, selected studies also focus on agricultural developments in regions that represent important trading partners of the former planned economies of Eurasia, such as Africa and Southeast Asia. In addition, there is economic-historically oriented research on the growth of industrialising agricultural countries over the last two centuries. Methodologically, the department's competencies lie primarily in statistical-econometric procedures, experimental methods of behavioural economics and approaches in the field of artificial intelligence. At the same time, digital solutions such as apps or “virtual reality” environments are developed and implemented for research purposes.

The contributions of the department can be assigned primarily to the thematic complexes *“Reduction*

of and adaptation to environmental risks”, “Securing world food supplies and competitive supply chains” and “Diffusion of innovations and knowledge”.

C. Department Structural Change

The Structural Change Department investigates the process complexity, dynamics and drivers of agricultural structural change as well as the potentials of sustainable land use, including further development and provision of suitable methods and conceptual foundations. On the one hand, the aim is to identify and analyse specific trends and problem areas in agriculture with a view to the transformation regions of Europe and Asia in the context of global developments. These concern in particular the development and functioning of agro-holdings as well as capital- and knowledge-intensive modern agriculture, including their embedding in value chains and the political-institutional framework. A second research area deals with the modelling and analysis of the drivers of agricultural structural change. Thirdly, the department investigates which untapped production potentials exist in the transition region of Eastern Europe and Asia, how these production potentials can be realised with regard to climate protection and adaptation to climate change, and what ecological and socio-economic consequences this would have. A fourth area concerns the role of the bio-economy in agricultural structural change. A fifth integrative area of work is formed by contributions to a general theory of change and transformation of agricultural structures and value chains, which aim at a better understanding of the special interdependencies between the agricultural sector and society against the background of complex agrarian structural developments. The theoretical and methodological competencies of the department include agent-based modelling, machine learning, spatial statistics, satellite-based remote sensing, systems theory, and experimental philosophy and ethics.

Based on this research orientation and in accordance with its competencies, the department contributes particularly to the thematic complexes *“Creating resilient agricultural systems”, “Reduction of and adaptation to environmental risks”, “Designing appropriate regulatory frameworks and institutions”, and “Diffusion of innovations and knowledge”.*

D. Cross-departmental research groups

Regionally focused inter-departmental groups generate synergies. The China International Research Group, the Southeast Europe, and the Central Asia Research Group provide platforms for all three scientific departments. By facilitating the exchange with researchers in the respective countries as well as worldwide, the joint development of research funding proposals, joint implementation of events as well as joint data and information collection, these two networks generate added value and increase IAMO’s cooperation opportunities.

E. External collaboration

IAMO's working groups and their scientists are involved in numerous national and international collaborations. In addition to informal cooperation at the staff and working group level, these include, for example, (i) strategic cooperation with neighbouring universities, such as the Martin Luther University Halle-Wittenberg in particular, and within the Leibniz Association within the framework of science campuses, alliances and networks, (ii) cooperation agreements and strategic cooperation with

institutions in the region under consideration in particular,⁶ (iii) cooperation with international inter-governmental organisations, such as the FAO, the World Bank Group or IFPRI, (iv) memberships in subject-related associations, both at national and international level, (v) participation in project consortia, such as within the framework of EU research programmes, BMBF and BMEL projects or DFG joint projects, and (vi) IAMO fellowships for outstanding external scientists with a particular interest in cooperating with members of the Institute.

6. Communication and interaction with business, politics and society

Knowledge transfer activities at IAMO have gained importance over time (see Transfer concept 2022). Increased systematic efforts are being made to intensify the exchange between science and the non-academic world in all its dimensions. The aim is not only to disseminate the results of its own research broadly but also to work directly on solving social, economic and agricultural policy challenges in the partner regions. This is done through the targeted transfer of knowledge to the partner regions, advising decision-makers from business, civil society, policy arena and administration, both at the national and international level, as well as through the joint development of solutions with actors from business and politics within the framework of specific projects. Conversely, knowledge transfer also means integrating both the pressing issues in our partner countries and their knowledge bases into our research projects. A key element of IAMO's transfer strategy is academic capacity building, including infrastructures and platforms for long-term oriented research, advisory activities and innovation in the partner regions themselves. This also draws on experience from Germany as well as at the international level. In turn, it is also important to use the experience and expertise gained in the target regions to overcome challenges in other regions of the world, including Germany.

Four strategically designed transfer formats serve the successful design of the outreach activities. All formats are characterised by the fact that the activities are science/evidence-based: They are strictly oriented towards the scientific competencies and research activities of the staff and cooperation partners. Outreach is thus always closely linked to IAMO's research, which forms the basis of all such activities. At the same time, knowledge transfer activities enrich the research by considering important impulses and experiences from the non-academic sector in the design of studies. Knowledge transfer activities, albeit in varying scope and formats, are the tasks of a large part of the academic staff and various actors within the institute, including third-party funding management and public relations. They are all involved in the coordination and governance of transfer-oriented projects.

The four IAMO transfer formats address different target groups and are designed differently accordingly. The first format (*"Transfer through interaction and dialogue"*) involves the implementation of transdisciplinary research projects. It aims to gain solution and innovation-oriented knowledge in collaboration with business, policy and administration representatives. The second format (*"Transfer through minds"*) focuses primarily on academic training and capacity development both at the institute and in the regions under consideration. Events, transfer-oriented publications and media appearances form the third format (*"Transfer through events and information"*) and are aimed at an interested specialist audience, including representatives from politics and business. Finally,

⁶ The institute cooperates with a large number of universities and research institutions in its target regions, a considerable proportion of which are governed by cooperation agreements. Very pronounced relations are found with China, Ukraine, Kazakhstan, Russia (suspended at the time of writing), Uzbekistan, Serbia, Albania, the Czech Republic, Bulgaria, Poland and Romania.

demand-driven activities such as expert reports for ministries and international organisations, as well as participation in committees and advisory boards, represent the fourth format (*“Transfer through consulting”*).

7. Qualification and career development

The academic training of early career researchers and the promotion of individual careers are part of the institute's essential tasks and form an important part of the transfer activities (see Section 6). These activities are under the Early Career Scientists Programme (ECSP) umbrella. The focus is on the qualification of early-career researchers from the studied regions, especially in the early phase of their independent scientific work (doctorate and habilitation). Individual research work is supported by the IAMO Graduate School and the German-Austrian-Swiss Doctoral Certificate Programme in Agricultural Economics with a broad range of theoretical and methodological courses. In addition, temporarily oriented structured doctoral programmes, capacity-building projects or summer schools in the target countries are essential activities.

Within the scope of its possibilities, IAMO follows the career guidelines of the Leibniz Association. Key elements are the promotion of personal initiative, a high level of transparency regarding career development paths, appropriate employment security during the qualification phase and support for individual career opportunities. On an individual level, this is implemented through regular mentoring and annual meetings in the respective departments. IAMO also promotes the development of individual project ideas and their implementation up to the possibility of leading project groups, even in early career phases. In addition, continuous professional development of all employees is supported.

8. Cooperation, quality assurance and work culture

IAMO is committed to adhering to national and international standards for good scientific practice, particular the DFG "Guidelines for Safeguarding Good Research Practice". Flat hierarchies with special support for independent research under the systematic supervision of doctoral students are central principles of the institute's work. IAMO's international orientation and cooperation with other national and international teaching and research institutions, especially the Martin-Luther-Universität Halle-Wittenberg (MLU), contributes to strengthening Halle as a centre of science and research and the visibility of the Leibniz Association.

Strategic orientation and research management are carried out in a participatory manner, involving the staff in cooperation with IAMO's international Scientific Advisory Board as well as IAMO's Foundation Board. This mid-term agenda promotes goal-oriented and autonomous work in project groups and a problem-oriented focus on the target groups of our work.

Transparency of the research process, including the handling of research data up to the publication of research results, is increasingly gaining interest within and outside academia. IAMO continues to implement its strategy⁷ of handling research data in a way that is both transparent and conducive to research. The storage of metadata in the internal research information system FIS is a central prerequisite for their retrievability. The archiving of data in accordance with the DFG Kodex is

⁷ IAMO (2020): Research data management concept (Version from 17.04.2020).

ensured. Researchers are encouraged and supported, to the extent legally permissible, to publish research data along with publications. In addition to a large number of certified repositories, the so-called "IAMO Institute Showcase" at Sowidatanet|datorium (GESIS) is one possibility.

Research, qualification and outreach are supported by the international and multicultural staff of the institute. Scientific integrity is the basis of IAMO's self-image. It reflects the basic ethical attitude of the researchers and their responsibility for the quality of their scientific work. Only scientific integrity enables creativity and fair competition. The members of the institute act responsibly and follow the principle of thrift and incorruptibility. The working atmosphere is based on personal integrity, mutual respect, the recognition of diversity as well as fairness and care in dealing with each other. The institute is committed to equal opportunities for all, regardless of age, disability, ethnic origin, gender, religion, ideology or sexual orientation. IAMO takes measures to reconcile family and career and offers attractive and future-oriented working conditions.

Draft - unofficial translation