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Methodology of the Agriculture Business Climate (ABC)

Kyiv, January 2018

About the Project “German-Ukrainian Agricultural Policy Dialogue” (APD)

The project German-Ukrainian Agricultural Policy Dialogue (APD) started 2006 and is supported up to 2018 by the Federal Ministry of Food and Agriculture of Germany (BMEL). On behalf of BMEL, it is carried out by the mandatary, GFA Consulting Group GmbH, and a working group consisting of IAK AGRAR CONSULTING GmbH (IAK), Leibniz-Institut für Agrarentwicklung in Transformationsökonomien (IAMO) and AFC Consultants International GmbH. Project executing organization is the Institute of Economic Research and Policy Consulting in Kyiv. The APD cooperates with the BVVG Bodenverwertungs- und -verwaltungs GmbH on the implementation of key components related to the development of an effective and transparent land administration system in Ukraine. Beneficiary of the project is the Ministry of Agrarian Policy and Food of Ukraine.

In accordance with the principles of market economy and public regulation, taking into account the potentials, arising from the EU-Ukraine Association Agreement, the project aims at supporting Ukraine in the development of sustainable agriculture, efficient processing industries and enhancing its competitiveness on the world market. With regard to the above purpose, mainly German, but also East German and international, especially EU experience are provided by APD when designing the agricultural policy framework and establishing of relevant institutions in the agriculture sector of Ukraine.



www.apd-ukraine.de

Authors

Anastasiia Pylaieva

Oleksandr Donchenko

Volker Sasse

Igor Ostapchuk

pylaieva@apd-ukraine.de

donchenko@ucab.ua

sasse@apd-ukraine.de

ostapchuk@ucab.ua

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LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Agriculture Business Climate
APD	German-Ukrainian Agricultural Policy Dialogue
AVA	Agricultural Value Added
BCI	ifo Business Climate Index
GDP	Gross Domestic Product
ha	hectare(-s)
ifo Institute	Leibniz Institute for Economic Research at the University of Munich
UCAB	Ukrainian Club of Agribusiness

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1. WHAT IS ABC?

Agriculture Business Climate (ABC) is an indicator for the development of the agricultural sector in Ukraine. It was developed in close collaboration between the Ukrainian Agribusiness Club (UCAB) and the German-Ukrainian Agricultural Policy Dialog (APD). ABC provides insights into the subjective evaluation of the business climate by agricultural producers and includes two main blocks. The first one reflects the perception of agricultural producers on the current, and the second one on the prospective economic situation. ABC considers micro and macro levels of doing agribusiness that include aspects related to operations at the enterprise level, agricultural and other state policies, as well as the expected development of the overall economic situation. In addition to the value of the information collected and analyzed, ABC provides useful input for policy decision makers as well as to the business community.

Agricultural sector is one of the most promising sectors in Ukraine. It is a recognized player on international agricultural markets. Being a stable source of foreign currency for the state, it also provides 13.7%¹ of the country's GDP and employs 16²% of the population of Ukraine.

Recent economic decline, political instability in the country, regular changes of the legislation and many other factors have a great impact on the sector, affecting its economic performance, profitability of agricultural enterprises, investment climate etc. Hence, there is a strong need in reliable information about the recent trends in agricultural sector in Ukraine: prices, regulations, investment intentions of agricultural producers, perception of the ease of doing agribusiness in Ukraine. This will help to evaluate effectiveness of the state regulation policies, development of the sector and its investment attractiveness. However, currently there is no (to our knowledge) reliable source of information that would regularly provide information on the latest changes in the environment for doing agricultural business in Ukraine.

ABC aims to address this information gap by receiving responses of the participants of the agricultural market on their current economic situation and expectations on the one-year period. These participants include 400 agricultural enterprises and households involved into primary agricultural production. They provide insights into development of their businesses, as well as into legislative and institutional environment of operating in agricultural sector. Thus, the trends that are impeding or, in contrary, contributing to the development of the sector are reflected.

In a systematic and timely manner, the ABC provides valuable information on the most recent changes in business environment to policy decision makers, international development institutions, research centres, finance sector companies, agricultural input suppliers, agricultural producers, food industry and others. This also facilitates sustainable development of the agricultural sector of Ukraine.

The regular output (see example in Annex 2) is produced immediately (during max. 12 working days) after the received data are analysed. Output consists of a regular press release and of a more detailed output that are simultaneously published on UCAB and APD web pages. User rights of the term "Agriculture Business Climate (ABC)"³ are reserved to APD and UCAB as partners during a joint venture.

¹ World Bank Open Data (for 2016).

² ILOSTAT (for 2016).

³ Previously, the abbreviation ABI was used, which is no longer valid. ABC was identified as the main abbreviation for the Agriculture Business Climate by the APD and UCAB experts. [AGK – in German, AБК – in Ukrainian].

2. METHODOLOGY

ABC focuses on the primary agricultural production. It analyses opinion of agricultural producers about the ease of doing agricultural business in Ukraine along with related economic, political and social factors. In order to achieve this goal, there was designed a specific survey for the regular collection of the respective data. The ABC survey focuses on the following topics:

1. Personal assessment of doing agribusiness environment by agricultural producers. As private agricultural producers are the driving force of the agricultural sector development, it is crucial to be aware of their plans for development and investment intensions. Opinion of agricultural producers will reflect efficiency of the sector regulation, doing business climate and perspectives for the agricultural sector development.
2. Legislative and general economic frameworks. Favourable legislative framework and stable economic situation are one of the key criteria providing facilitation of doing agribusiness. Factors like state support, interest rates, taxation, administration and custom costs influence investment climate as well as development of agricultural sector of the country.
3. Ease of work with local and central state authorities and institutions. Human factor is often claimed to be an important obstacle for the development of agricultural sector. Notably, such factors as corruption, bureaucracy, incompetency and turnover of state officials at local and national levels affect implementation of laws, trade practices, allocation of local and international investments, attractiveness of the sector for investments, efficiency of the agricultural enterprises etc.

In order to address above mentioned topics there was developed a specific questionnaire (see Annex 1), which contains two blocks of questions. Each block of questions starts with general question aimed to get an insight into overall perception of current and perspective economic situations. Other ten questions are designed to explain fundamental trends at micro and macro levels originated from the first question. Thus, first block is related to the issues of operations at the level of the enterprise. It contains questions on: profit and cost levels, development of the business, access to third party capital, qualified employees, modern machinery and equipment. The second block consists of the questions about the impact by general policy and economic situations on the business, state support and willingness of authorities to cooperate.

In order to get wholesome perception of agribusiness environment there is a need to include into the survey a representative structure of agro producers. Therefore, participants of ABC survey are households, individual enterprises and enterprises in the holding structure. They are also divided by region, specialization and land bank size. The number of respondents from each group of producers within clusterization criteria corresponds to their input into the total agriculture value added (AVA) of Ukraine.

The interview is conducted three times per year. The data collected are analyzed. ABC calculation methodology represents the mean of the balances of current and expected business situation appraisals. Values of ABC may fluctuate between -100 (very poor) and +100 (very good). The results on ABC are published in a press release.

2.1 Sampling

The ABC includes agricultural enterprises of the different ownership structure as well as households. According to the statistics, agricultural enterprises cultivate 67% of arable land in Ukraine – 21.8 m ha. From which 5.85 m ha is cultivated by enterprises that belong to holding structured businesses and 15.95 m ha - by Independent agricultural enterprises. The rest of the arable land

is cultivated by households.

Justification of sample

According to the state statistics, there are 47,442 private agricultural enterprises in Ukraine. Representative sample size for such number of enterprises is 400 respondents. Sampling was done according to the following formula:

$$SS = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}, \text{ where:}$$

SS – sample size,

z – z-score,

N – population size,

e – margin of error,

p – standard deviation.

Thus, considering that number of producers equals 47,442, confidence level is 95%, margin of error – 5%, then, according to the formula, sample shall not be less than 382 respondents.

Interviewing 400 agricultural producers will provide statistically reliable data at the county level with the margin of error $\pm 4,85\%$ at a confidence level 95%.

Stratification of the sample is required to consider the opinions of distinct participants of the Ukrainian agricultural market. The sample of agricultural producers is clustered by three main factors: a) region, b) type of producer and c) specialization. The quantities of respondents in the clusters correspond to the input of these types of producers into the AVA of Ukraine. Total input of survey participants into AVA is around 11%, which seems sufficient when compared to the input of German BCI⁴ survey participants.

a) Stratification by the region is one of the key criteria of clusterization for several reasons. Firstly, differences in size of investments into the regions of Ukraine as well as differences in climatic conditions (e.g. humidity, average temperature, number of drought days) may impact the ease of doing agribusiness and attitudes towards it among agricultural producers. Secondly, agricultural producers of different regions have different attitudes towards participation in surveys and consequently demonstrate different response rate. Thirdly, regions of Ukraine vary by the number and size of enterprises. Stratification by the region is mandatory to guarantee representation of all the regions in the sample (see Figure 1). Note that Crimea and Donbass are not considered.

The sample comprises producers from four regions (in parenthesis are shares of AVA):

- South, steppe areas – Odesa, Mykolaiv, Zaporizhzhya, Kherson regions (18%).
- Black soil areas – Khmelnytsky, Vinnytsya, Cherkasy, Kirovograd, Dnipro, Poltava regions (39%).
- Carpathian region – Chernivtsi, Ivano-Frankivsk, Zakarpattya, Lviv, Volyn, Rivne, Ternopil regions (17%).
- North-East, sand soil areas – Kyiv, Chernihiv, Zhytomyr, Sumy, Kharkiv regions (26%).

⁴ The calculation methodology of ABC follows in broad terms the German “ifo Business Climate Index”, see Chapter 2.3

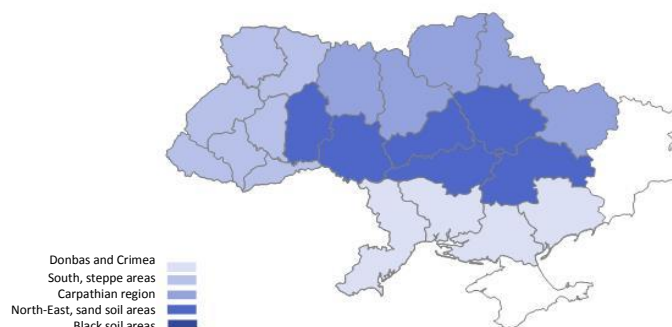


Figure 1 Regions considered in the ABC

b) It is common to distinguish agricultural enterprises by specialization (crop production, animal production, mixed). According to official statistics, most of the agricultural enterprises in Ukraine have mixed specialization. However, in practice they are usually involved into crop production. Given the absence of reliable statistical data on enterprises with mixed production, it is impossible to stratify the sample by this factor. It is decided to specify specialization during the interview and analyze it afterwards.

In analysis session an expert has to keep in mind that cash crop and mixed specialized companies build up one of the most reliable and promising sector across the nation at the moment, on the contrary animal products producers suffer from a rapidly declining sector. Decrease in cattle size and production of milk, meat and meat products is threatening food security of the country and therefore should be analyzed and addressed by policymakers and investors.

Sample includes two sectors divided by specialization (in parenthesis – share of AVA):

- animal and mixed production (24% for agricultural enterprises),
- crop production (76% for agricultural enterprises).

c) Stratification of the sample by the type of an enterprise and ownership structure (see Table 1) is reasonable because different types of producers differ by the inner administration structure, capitalization, use of external finance, use of agricultural machinery, involvement into local/foreign agricultural markets and local governance etc. All these factors have an impact on the ease of doing business in Ukraine. Size is also an important factor because it is bound with an access to external finance. Moreover, bigger enterprises have more decision making power and influence on the agricultural sector performance, whereas individual middle land bank companies demonstrate higher productivity results in accordance to the Statistics office of Ukraine.

Sample comprises four enterprise structures (in parenthesis – share of AVA):

- Individual producers (households) (46%).
- Independent enterprises (33%).
 - Small and medium farmers – up to 5,000 ha (78% or 26% of total sample).
 - Big farm enterprises – more than 5,000 ha – (22% or 7% of total sample).
- Agriholdings (21%).

Considering that state enterprises are to be privatized in the nearest future, it would be more relevant to consider these enterprises as private ones (in the study state enterprises are considered in the cluster of independent private enterprises up to 5,000 ha). Furthermore, the key argument for reflecting agriculture producer structures in ABC is their share in gross production (see Box 1). Hence, households need to be included in the survey, due to their significant market share in meat, dairy, vegetables and fruit production.

Box 1 provides definitions of the types of agricultural producers that participate in ABC survey.

Box 1 Definition of "enterprise" structures

- Individual Producers (households):

Owners of agricultural land, who received their land plots (usually 1-5 ha) during the privatization in early 90s. They have no juridical and fiscal status. However, their share in important agriculture production, such as milk and meat production, is significant.

- Independent Enterprises:

Juridical entities with fiscal registration that run business on their own and rented land.

- Agriholdings:

Is a specific form of capital ownership when parent company, having a control portfolio of subordinated business entities, conduct management, control activities of those companies, and as a result unifies those companies into a legal structure with corresponding aims and mission.

Source: APD and UCAB

Table 1 presents number of agricultural producers in the sample according to each of the clusterization criteria.

Table 1 Model of a sample clusterization

Region	# of re-spondents	type of producer	# of re-spondents	specialization	# of re-spondents
South, steppe areas	72	household	33		33
		independent < 5,000 ha	24	animal production	6
				crop production	18
		independent ≥ 5,000 ha	7	animal production	2
				crop production	5
		private enterprise in agriholding	8	animal production	2
Black soil areas	156			crop production	6
		household	72		72
		independent < 5,000 ha	41	animal production	10
				crop production	31
		independent ≥ 5,000 ha	12	animal production	3
				crop production	9
Carpa-thian region	68	private enterprise in agriholding	31	animal production	7
				crop production	24
		household	31		31
		independent < 5,000 ha	17	animal production	4
				crop production	13
		independent ≥ 5,000 ha	5	animal production	1
North-East, sand soil areas	104			crop production	4
		private enterprise in agriholding	15	animal production	4
				crop production	11
		household	48		48
		independent < 5,000 ha	27	animal production	6
				crop production	21
		independent ≥ 5,000 ha	8	animal production	2
				crop production	6
		private enterprise in agriholding	21	animal production	5
				crop production	16
Total #	400		400		400

Source: APD and UCAB

2.2 Data collection

The ABC survey is conducted three times per year: in February, August, and November – before the sowing campaign, after the first harvest is collected and at the end of harvesting, respectively. After the years of interviewing agricultural producers, the UCAB (AgriSurvey department) experts found that these months are the most appropriate for the primary data collection, because managers of enterprises are relatively less busy this time. Each round of interviews lasts around one week.

Taken the large size of the sample and regularity of the poll, telephone survey will be the most convenient and efficient data collection method. Telephone interviewing allows to:

- Interview large number of respondents
- Reach respondents in remote settlements
- Have relatively high response rate
- Speed up data collection process
- Optimize costs of survey

Data collection should be conducted by external interviewers trained by UCAB's team before interviews' process. Raw data will be available in Excel and SPSS format. The UCAB database of agricultural enterprises will be used for telephone interviewing. Taken the repeated character of the survey, possibility of development of the respondent panel should be considered.

2.3 Calculation methodology

The calculation methodology of ABC follows in broad terms the German "ifo Business Climate Index" (BCI). BCI was developed in the mid-1960s by the ifo Institute on the basis of the monthly company survey called the ifo Business Survey. "The ifo Business Climate is a widely observed early indicator for economic development in Germany"⁵. Now, the index is calculated based on the responses of 7,000 firms working in manufacturing, construction, wholesaling and retailing. Although BCI reflects only a limited share of GDP, it has shown his relevance for policy and business. The index is of particular significance for outlooks on reversals in economic growth, whereas turnarounds in the economic development can be forecasted with a quite high level of reliability.

Similar to BCI methodology, in order to calculate ABC, Ukrainian agro entrepreneurs take part in the survey assessing their **current business situation** and their **expectations** for the next period. ABC survey focuses on a one year period due to specifics of agricultural production. Entrepreneurs have three choice options to characterize their business situation: "positive – 1", "neutral – 2" or "negative – 3" (see questionnaire in Annex 1).

In case, when a respondent left a question with no answer, such a response should be noted with zero and excluded from calculation to avoid its negative impact on the overall result.

In order to proceed with the estimation of ABC, there should be calculated balance values for current business situation and expectations for the next period. The **balance value** for the current business situation represents the difference of the percentages of the "positive" and "negative" responses on the questions concerning current business situation. It is calculated by the following formula:

⁵ ifo Business Climate Index, *Calculating the ifo Business Climate*, <https://www.cesifo-group.de/ifoHome/facts/Survey-Results/Business-Climate/Calculating-the-Ifo-Business-Climate.html>

$$\text{Balance for current situation} = \frac{\text{Number of "positive"} - \text{Number of "negative"}}{\text{Total} - \text{Number of "neutral"}} * 100$$

The balance value of the expectations represents the difference of the percentages of the "positive" and "negative" responses on the questions concerning perspective economic situation in a one year period. It is calculated using the formula:

$$\text{Balance for expectations} = \frac{\text{Number of "positive"} - \text{Number of "negative"}}{\text{Total} - \text{Number of "neutral"}} * 100$$

Finally, **ABC** represents a mean of the balances of the business situation and the expectations that is calculated by the following formula:

$$ABC = \sqrt{(\text{balance for current situation} + 200) * (\text{balance for expectations} + 200)} - 200$$

The ABC balances can fluctuate between extreme values of -100 (i.e., all responding producers appraise their situation as poor and/or expect business to become worse) and +100 (i.e., all responding firms assessed their situation as good and/or expect an improvement in their business).

Data processing and analysis are performed in MS Excel using the calculations above described.

ANNEX 1 QUESTIONNAIRE FOR INTERVIEWS

<p>Ukrainian Agribusiness Club Research of business climate in agriculture +38 044 236 20 97 info@ucab.ua</p> <p><u>Select respondent's data</u></p> <p>Specialization: crop production, animal production, mixed;</p> <p>Region: South, Carpathian region, North-East; Black soils region;</p> <p>Land bank: ≥5,000 ha, <5, 000 ha, agrohholdings, households.</p>	<p>Hello, my name _____, I represent Ukrainian Agribusiness Club (UCAB). We conduct a survey on business climate in agricultural industry of Ukraine (explain and, if needed, rephrase): a research on agro producers' estimations for current & perspective situation in the industry and in their business. We appreciate your answers for few questions. It will take only few minutes. Answers are confidential. All the results will be used in generalized form with no personalization.</p> <p>I will ask questions about your estimations for concrete aspects in agro production of your business in format "good", "neutral", "negative" and then your opinion how it will change next year. There are 10 questions. So, let's start ...</p> <p><i>(In case of a respondent's demand for: a research is a mutual project of German-Ukrainian agro political dialogue (APD) and Ukrainian Agribusiness Club. An aim of the research is a development of an index for subjective valuation of agro business climate in Ukraine for agro business's developments demonstration in agro industry of Ukraine. Results will be available on web pages of our organizations: ucab.ua, apd-ukraine.de.</i></p> <p><i>Ask if respondent is interested in taking part in survey on regular basis and in receiving survey results by email (ask for email).</i></p> <hr/> <p>*FOR INTERVIEWER: PLEASE, FOR FULFILLMENT, MARK AN ANSWER WITH A CIRCLE !!!</p>
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Current situation (in comparison to the similar period of last year)	Expectations (in the similar period of next year)
Microeconomics	
<p>1. How would you assess your current economic situation as an agricultural producer in comparison to the similar period of last year? positively 1 neutrally 2 negatively 3</p> <p>1.1. How did the profits of your business change in the current period in comparison to the similar period of last year? increased 1 stability 2 decreased 3</p> <p>1.2. How did the cost price of your business change in the current period in comparison to the similar period of last year? increased 3 stability 2 decreased 1</p> <p>1.3. How would you assess development of your business (changes in land bank/number of cattle) in the current period in comparison to the similar period of last year? positively 1 neutrally 2 negatively 3</p> <p>1.4. How would you assess an access to third party capital of your business in the current period in comparison to the similar period of last year? positively 1 neutrally 2 negatively 3</p> <p>1.5. How did the number of employees of your business changed in the current period in comparison to the similar period of last year? increased 1 stability 2 decreased 3</p> <p>1.6. How did the number of cars, machinery and equipment of your business change in current period in comparison to the similar period of last year? increased 1 stability 2 decreased 3</p>	<p>2. What are your expectations on the economic situation of your business for the similar period of next year? positive 1 neutral 2 negative 3</p> <p>2.1. What are your expectations on the change of profits of your business for the similar period of next year? will increase 1 stability 2 will decrease 3</p> <p>2.2. What are your expectations on the cost price of your business for the similar period of next year? will decrease 3 stability 2 will increase 1</p> <p>2.3. What are your expectations on the development of your business (changes in land bank/number of cattle) for the similar period of next year? positive 1 neutral 2 negative 3</p> <p>2.4. What are your expectations on the access of your business to third party capital for the similar period of next year? positive 1 neutral 2 negative 3</p> <p>2.5. What are your expectations on the changes in number of employees for the similar period of next year? will increase 1 stability 2 will decrease 3</p> <p>2.6. What are your expectations on the changes in number of cars, machinery and equipment of your business for the similar period of next year? will increase 1 stability 2 will decrease 3</p>

Macroeconomics and Politics

1.7. How would you assess an impact by the general policy situation in Ukraine on your business in the current period in comparison to the similar period of last year?

positively 1
neutrally 2
negatively 3

1.8. How would you assess an access of your business to state support (subsidies) in the current period in comparison to the similar period of last year?

positively 1
neutrally 2
negatively 3

1.9. How would you assess an impact of general economic situation in Ukraine (interest rate, taxation and administration, export and import, custom costs) on your business in the current period in comparison to the similar period of last year?

positively 1
neutrally 2
negatively 3

1.10. How would you assess willingness of state authorities to cooperate (bureaucracy, corruption problems) in the current period in comparison to the similar period of last year?

positively 1
neutrally 2
negatively 3

2.7. What are your expectations on the impact by the general policy situation in Ukraine on your business for the similar period of next year?

positive 1
neutral 2
negative 3

2.8. What are your expectations on the access of your business to state support (subsidies) for the similar period of next year?

positive 1
neutral 2
negative 3

2.9. What are your expectations on the impact of general economic situation in Ukraine (interest rate, taxation and administration, export and import, custom costs) on your business for the similar period of next year?

positive 1
neutral 2
negative 3

2.10. What are your expectations on the willingness of state authorities to cooperate (bureaucracy, corruption problems) for the similar period of next year?

positive 1
neutral 2
negative 3

ANNEX 2 PRESS RELEASE EXAMPLE

Agriculture Business Climate climbs in November 2017

Kyiv, 28th November 2017.

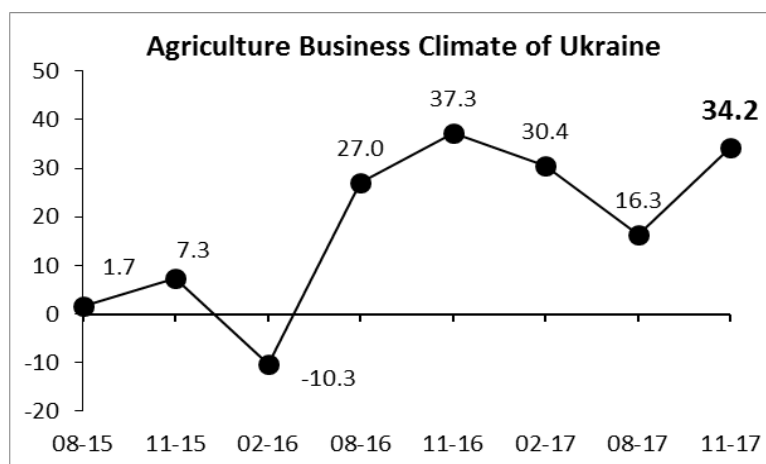
November survey on Agriculture Business Climate (ABC) demonstrates improvement of perception by agricultural producers of their business performance and opportunities in Ukraine.

The current survey indicates that agricultural producers are quite confident in their business feasibility, as due to the received responses, incomes have increased.

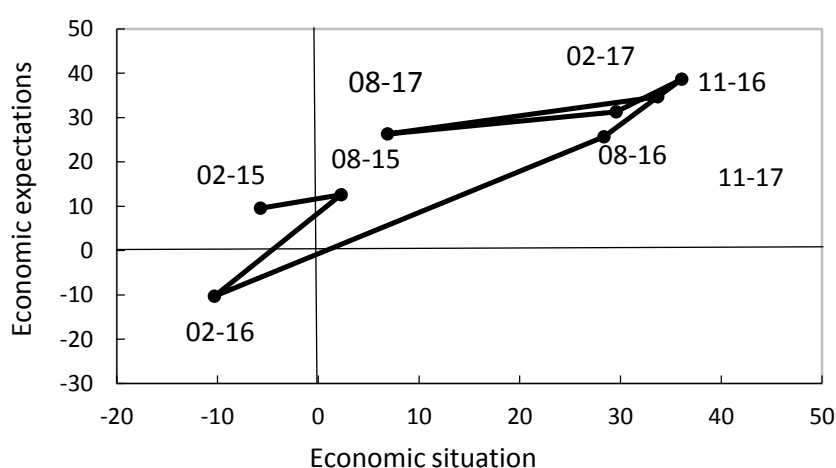
Moreover, the respondents expect further increase in cash inflows. The profit expectations for the coming year are also positive. The assessment of willingness of the authorities to cooperate received a particularly positive 40.8 rating and is likely to be associated with ongoing administrative reform. As in previous surveys, the assessment of general political and economic conditions and government support in the agricultural sector remains negative. The assessment of the development of production costs is particularly negative- at the level of -36.7 points.

The estimation results are influenced significantly by the positive results in South regions, which are evaluated at the level of 45.4 points. Referring to production scale, lowest estimation of Agriculture Business Climate was provided by farms with less than 5000 ha at the level of 19.1 points, whereas farms with land bank more than 5000 ha demonstrated an estimation at the level of 59.6 points.

Producers of animal products have provided with very high estimation of ABC, i.e., at the level of 38.4 points. On the contrary, crop producers, which so far constantly provided higher estimates, have estimated ABC with just 27.4 points.



ABC Cycle Clock



AABC Cycle Clock demonstrates producers' evaluation of current situation and business expectations. November 2017 survey demonstrates that evaluation of economic situation improves strongly, while expectations remain more or less on the same level in upswing/booming area, compared to August 2017. It also attracts attention to the fact, that the business climate has developed from a rather uncertain, depressive phase - 2015 and early 2016 - into a relatively stable boom.

Note: Agriculture Business Climate (ABC) was developed and introduced by common efforts of German-Ukrainian Agricultural Policy Dialogue (APD) and the association "Ukrainian Agribusiness Club" (UCAB) on the base of German general business climate (ifo-Geschäftsklimaindex). The survey and analyses are carried out three times per year and determine subjective perceptions of Ukrainian producers on both, their current business situation and one-year outlook. ABC may change from -100 (very poor) over 0 (indifferent) to +100 (very good).

Starting from the current report, technical improvements in calculation of ABC have been implemented. In particular, only one question is reflected in the graphs shown (according to the methodology of ifo-Geschäftsklimainde). More detailed questions, e.g., on the business and macroeconomic framework, are now used for explanation of the results. ABI for all of the surveys have been recalculated which led to its steady and considerable increase.