

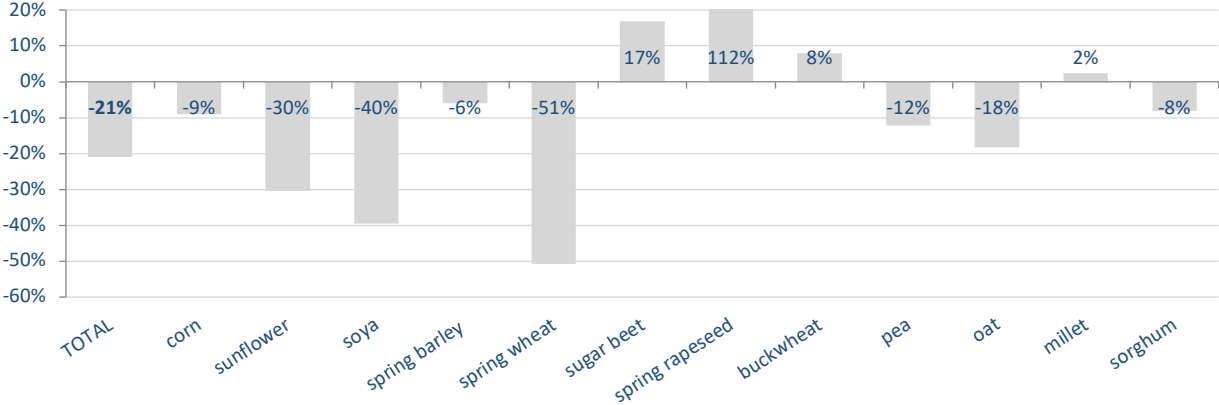
AVAILABILITY OF SEEDS AS AN IMPACT FACTOR OF EXPECTED SOWING AREAS OF MAIN CROPS FOR THE HARVEST OF 2023

The Essence of the Issue. The agricultural sector of Ukraine continues to operate in significant turbulence and uncertain conditions with regard to market prospects. Disparate demand prices, compared to the global situation, lead to the accumulation of losses and provoke the gradual curtailment of production. At the same time, the results of experts' surveys indicate that most farmers, despite the negative economic results, are trying to continue their operations at the same level. Hence, the need of supporting and stimulating the agrarian sector in 2023 remains extremely urgent. The availability and supply of seeds can be considered as one of the basic elements for conducting a successful sowing campaign for the 2023 harvest and as an indicator of the sustainability of the agrarian sector of Ukraine in 2023.

Current Forecasts. According to the results of the conducted survey ("DAR", October 2022), the sown areas of spring crops may decrease by 21% compared to 2022. In general, 67% of respondents plan to reduce the sown area of spring crops with regard to all of the spring crops with some exceptions.

Spring crops sowing area planned changes in 2023 compared to 2022, farmers' survey.

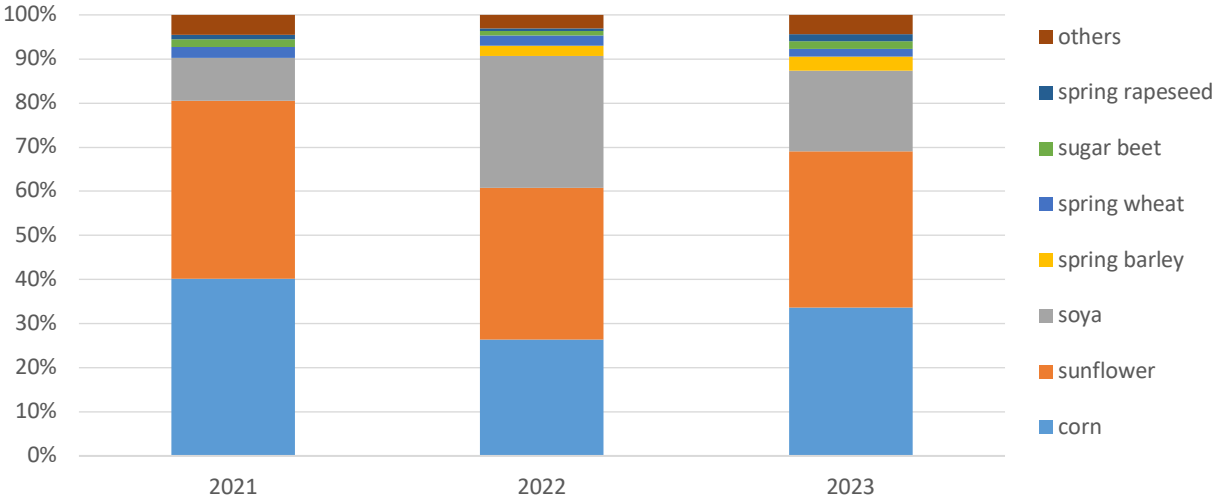
Crops were ranked by sowing area



Source: Ministry of Agrarian Policy, survey results

The largest reduction in the sowing area is expected due to a decrease in soybeans, sunflowers, corn, and spring wheat.

Structural changes in the sown area of spring crops



Source: Ministry of Agrarian Policy, survey results

Seeds as a Sowing Impact Factor. According to calculations, seeds, depending on the sowing culture, accounts for 10% to 15% of the total cost structure. The results of the conducted survey

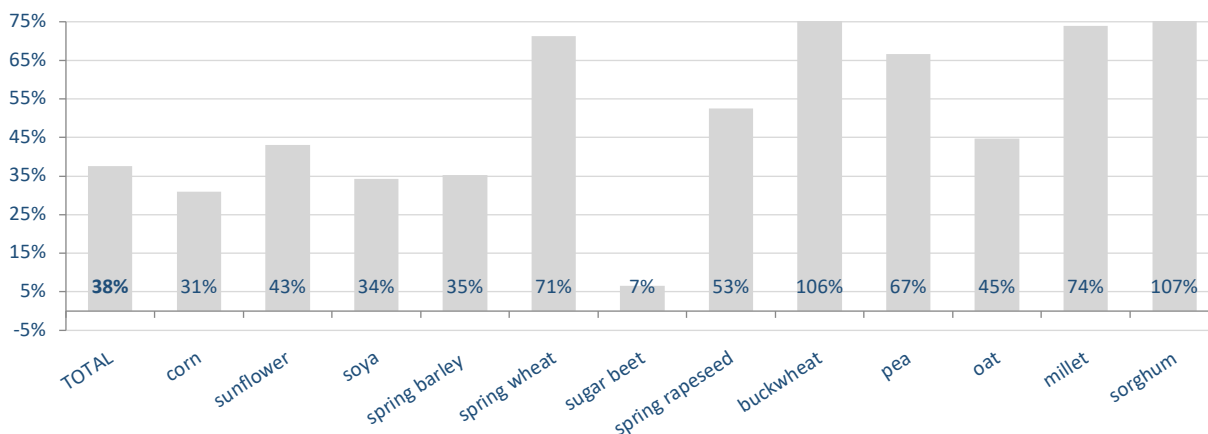
indicate that the costs and availability of seeds are rather sensitive factors that impact the farmer's production plan setup.

Most respondents' (71%) answers revealed that access to additional seeds (free of charge) would encourage them to increase the sown areas. According to calculations, an additional free seeds supply may result in an 8% sowing area increase in comparison to the 2022 season. In general, the farmers who took part in the survey would be ready to increase their own sown areas by 38% compared to current expectations if free-of-charge seeds would be available.

As a study reveals, the highest response of free seed supplies in the sown area was registered with regard to sunflower, corn, buckwheat, spring wheat, barley, etc.

Spring crops sowing area planned changes in 2023 compared to 2022 (free seeds assumption), farmers' survey

Crops were ranked by sowing area



Source: Ministry of Agrarian Policy, survey results

Considering the results of the survey and the available sown area data in 2022, the incentive measures to provide additional free seed may facilitate agricultural activity in the area of at least 3.6 million hectares in 2023.

Scenario forecasts of the sown area in 2023, thousand ha

	2022 year	Forecast 2023 (scenario: general)	Forecast 2023 (additional seed)	Need for seeds, k ha	Need for seeds, k tons	Price, \$ / 1 seed units.	Total costs, \$ million
Total	12 138	9 596	13 206	3 636	194,0	-	322,6
corn	4 225	3 844	5 036	1 192	23,8	120	143,0
sunflower	4 696	3 268	4 674	1 405	21,1	90	126,5
soya	1 523	921	1 237	316	37,9	75	23,7
spring barley and wheat	1 051	895	1 248	353	69,0	56	19,6
spring rapeseed	23	49	74	51	0,20	99	5,1
oat	152	124	179	55	11,1	72	4,0
sorghum	16	15	31	16	0,1	49	0,8
others	452	480	727	248	31	-	-

Source: Ministry of Agrarian Policy, survey results