

Supporting Transparent Land Governance in Ukraine

7th Steering Committee Meeting
Sep. 26 2023



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Land 
Transparency

Supporting Transparent Land
Governance in Ukraine



Overall objective and implementation modalities

Objective: Create preconditions for transparent functioning of land markets to ...

- ...enhance efficiency and sustainability of resource use
- ...provide a basis for rural investment and growth by small and medium farms & rural SMEs
- ...counter rural depopulation and impoverishment

Supported by EU - implemented in close collaboration with

- Ukrainian Govt. & Inst (MAPF, SGC, MoJ, MoEDT, NAIS, FLA, KSE, KIIS, KPI)
- EU-supported projects (IPRSA, U-LEAD, PRAVO). Joint Research Center (JRC) EU; etc.

Modalities of implementation

- Technical assistance, no hardware (extra EU procurement); no substitution Gov't work (RETF)
- Studies, Monitoring Piloting and Impact Evaluation

Link to WB support

- PCG: EU supported TF for PCG, Restructured P4R incl. support to PCG capitalization
- Pipeline Agricultural project; includes scaling farmer State Support Programs (5-7-9/PSG) via SAR

Agreed goals

- Legal basis for land market established, implemented with progress monitored
- SAR established & used for State Support, bank lending & private input/output dealers
- SGC reformed towards service organization, w. role for private sector
- Land registration & transfer simplified, loopholes for raiders blocked,
- Cadaster & registry fully interoperable & reasonably complete
- Local Gov'ts have capacity & data to develop & enforce land plans; land revenue ↑25%
- Landowners aware of legal framework; incidence of land disputes monitored
- Procedures to monitor land governance and land relations established & operational

Land laws adopted in 2020/1 w. EU/WB/US support

1. Anti-raider law (#340)
2. Land turnover law (#552)
3. Local Planning (#711)
4. NSDI (#554)
5. State support (#985)
6. State Geocadaster Reform (#1423)
7. Mandatory e-auction of public land (#1444)
8. Partial Credit Guarantee Facility (#3205)

Status of CMU regulations land laws (May 22, 2023)

Law	Total	Adopted	Draft for consult.	Drafting Started	Not started	Responsible
1. Anti-raider (#340)	5	5	0	0	0	MoJ; MAPF
2. Turnover law (#552)	4	4	0	0	0	MinEco, MoJ
3. Planning (#711)	10	9	1	0	0	MinReg, MinEco,
4. NSDI (#554)	3	3	0	0	0	MinEco, MAPF
5. S. Support (#985)	6	5	0	0	1	MinEco (5)
6. SGC ref (#1423)	23	12	3	0	8	ME, MAPF, Mincult,
7. E-auct. (#1444)	1	1	0	0	0	MinEco
8. PCG (#3205-2)	9	8	1	0	0	CMU, NBU (not incl)
Total for 8 laws	61	47	5	0	9	

Progress December 2022 – May 2023

1. Support land market reform implementation strategy
2. Support development of resolution # 474 /draft law (8025) to expand SAR functionality to better serve small farmers & transparently transfer state support
3. Monitoring of PSG impact and other state support programs
4. Support adoption of legal & regulatory basis for land relations monitoring
5. Adoption legal framework for mass valuation pilot (Law # 7532)
6. SGC reform: completion technical assessment DZK HW/SW and start design DZK Nova
7. Crop monitoring based on remote sensing for ag. policy development & monitoring/training
8. Analysis of war impact on Ukrainian agriculture
9. Support to MAPF communication and outreach

1. Land market reform implementation strategy

Background

- Anti-Corruption Law (#2322-IX) adopted June 20, 2022 - legal backing for land reform implementation
- Section on land reform builds on white paper elaborated by MAPF/KSE with project support in 2021

Activities/ Results

- Supported drafting of CMU res. 220 (see below) adopted March 2023: Implement ACL by March '25
- Supported drafting of law mandating mass valuation (# 7532-IX) - included in WB DPO
- Dialogue w. SGC on formula/mechanism for CAMA incl. linking of land to structures & infrastructure
- Dialogue with notaries on automated checking of land acquisition limit & tracing of beneficial owners
- Discussion with SPV to ensure land of SOEs is disposed transparently & in ways accessible to SMEs

Next steps

- Explore implementation support to CAMA if regulation appropriate
- Assess needs for checking of land ownership limits based on discussion with notaries
- Participation in WG convened by SPV to explore further activities
- Create the basis to allow land market opening for legal entities in July 2024

Contents of resolution 220 (ACLIP)

To be completed no later than March 2025

- Legalize computerized **market-based mass valuation** system for land; updated on bi-annual basis; use for determining tax obligations or lease rates to replace 'normative value'
- Eliminate **cadastral registrars' monopoly** on accessing cadastral data by allowing private surveyors to access these data when executing land inventory tasks
- Use only digital procedures for land registration & submission of land **surveying documentation**
- Pass legislation to reform **free land privatization**
- Pass legislation to establish a **single digital urban cadaster** that integrates information from the State land cadaster, registry of rights, data on real estate and construction objects, urban planning documentation, and land or objects' restrictions for environmental or cultural heritage protection
- Clarify procedure for elaborating **urban planning documentation**, its legal status and enforcement

ACLIP implementation progress (land related)

	<i>Total</i>	Done	In progress	Not done (overdue)	Not started
Mass valuation of land plots	7	0	1	0	6
Urban planning cadaster	8	0	3	0	5
De-monopolize surveyor certification	2	0	0	0	2
Incentivizing spatial planning	11	0	1	0	10
Reform of permanent use (state enterp.)	1	1	0	0	0
Reform of free land privatization	1	0	0	0	1
Inventory of state agric. lands	1	0	0	0	1
Simplifying land plot formation	12	1	2	0	9
e-auction of state & communal land	6	0	1	0	5
Cultural heritage objects	19	0	5	4	10
Total	68	2	13	4	49

Note: Status as of June 30,2023 as per NACP monitoring website

2. Expanding use of SAR

Background

- Piloted SAR PSG deployment 2022: 50 mn € to > 33,000 farmers transparently & quickly (8 weeks)
- Over 115k SAR sign-ups; SAR widely used by MAPF and other donors for agric. support
- With some adjustments, SAR fully compliant with EU CAP requirements

Activities/Results

- Supported drafting of amendments SAR (Res. 474 Aug '23) for (i) automated check of parcels' land use; (ii) expand SAR coverage & information; (iii) bank/private sector SAR access & competition
- Supported EU tender for hardware to establish SAR data center; pilot SW for 3rd party access to SAR
- Supporting drafting of law to make SAR independent registry & use for all state support (incl. PCGF)

Next steps

- Pilot SAR APIs for banks & use as digital marketplace for farmers – (climate smart agric.)
- Support software adjustment to check parcels' land use, train, apply & explore new apps (insurance)
- Agree pilot workplan with banks & PCGF; train in use of SW & implement
- Launch pilot with SNAPs to support smallholder sign-ups to SAR & provide data to hromadas
- Explore ways to expedite registration of unregistered parcels with MoJ

3. PSG monitoring & impact evaluation

Activities & results

- Biweekly reporting MAPF on SAR sign-up (by farm type, size, region and SS applications)
- Supported call center operation; used reports to identify areas for improvement
- Methodology to evaluate PSG impact using satellite imagery using DID – presented at various fora
- PSG support for winter crop late; possibly small positive impact on area under summer crops
- Viability of evaluation methodology proven- check cultivation status at parcel/field level successful
- MAPF requested to use for other programs (PCGF)

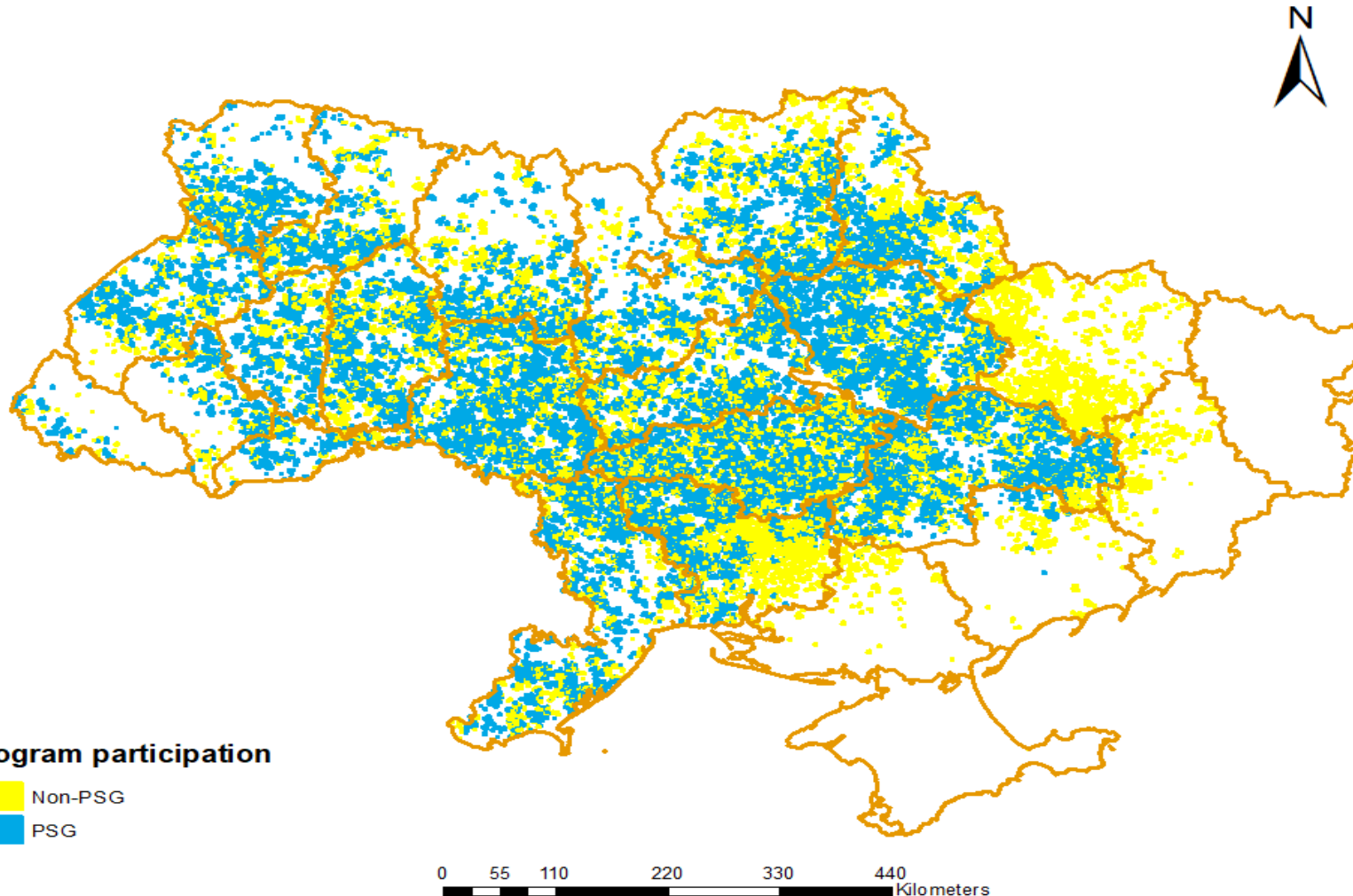
Next steps

- Use similar methodology to evaluate for 5-7-9 impact with KSE & NBU
- Follow up with household survey to translate results into household welfare
- Improve algorithm for crop identification based on training data (from private operators & PSG2)

Short beneficiary survey (Jan. 23)

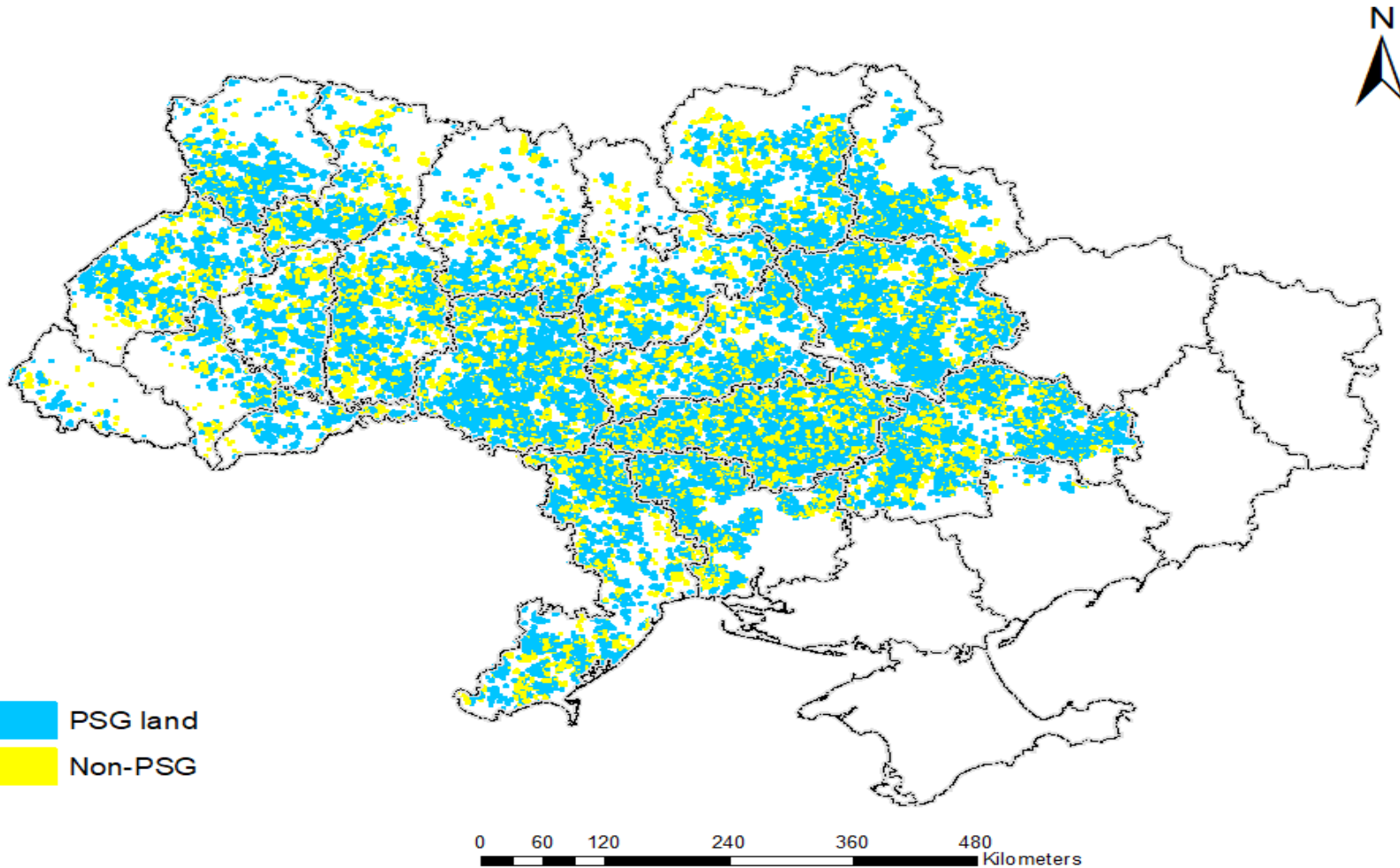
	Total	<20	20-50	50-120	Center	North	South	West
Know other program	0.428	0.254	0.470	0.535	0.402	0.457	0.408	0.516
Rating(1-10) ..sign-up	8.40	7.89	8.52	8.72	8.50	8.48	8.18	8.28
.. application	8.17	7.64	8.28	8.51	8.29	8.37	7.90	7.95
.. resource transfer	8.69	8.42	8.87	8.73	8.63	8.95	8.54	8.87
Expanded area	8.71	8.04	8.98	9.02	8.80	8.61	8.68	8.58
Grant rec'd (US\$)	2,954	606	2,332	5,302	3,172	3,242	2,331	2,835
bought inputs	0.652	0.612	0.689	0.651	0.624	0.614	0.740	0.652
bought mach.	0.104	0.134	0.135	0.053	0.114	0.175	0.031	0.116
used for cons.	0.038	0.052	0.020	0.041	0.044	0.018	0.042	0.029
used other	0.202	0.187	0.155	0.254	0.214	0.193	0.177	0.203
Will borrow @5%	0.521	0.343	0.619	0.574	0.524	0.554	0.457	0.563
For wkg cap (US\$)	23,499	20,448	18,278	29,951	22,043	33,965	14,663	29,352
For long term (US\$)	71,356	52,214	57,981	91,502	64,352	65,909	44,139	141,157
Area cultiv. (ha)	43.8	6.3	33.9	84.0	46.8	49.9	34.1	40.8
No. of obs.	620	190	203	227	324	81	122	93

Fields by PSG participants & non-participants



Ineligible conflict areas (yellow) may lead to contamination – control may pick up conflict effect

Restricting to eligible farms only



Only areas w/o conflict
Proper counterfactual

Estimating equation

$$Y_{it} = \alpha_i + \beta PSG_i T + \gamma X_{it} + \lambda_t + \varepsilon_{it}$$

α_i : Farm fixed effect

Y_{it} : Total cropped area (winter/summer) by farm i (or NDVI for relevant category of fields)

X_{it} : Time varying farm characteristics (GDD, precipitation, winter crop area for summer crops)

PSG_i : PSG land program participation dummy

T : 2023 Time dummy

β : Estimated PSG impact - difference between 23 & earlier years for treated vs. untreated farms

Matching if balance pre-parallel trend test not satisfied for estimation sample

Final results to be available shortly

4. Land relations/governance monitoring

Background

- Land *market* monitoring mandated by law 1423
- DZK started publishing land market data in July 2021 – interrupted Feb-May 2022; restarted June '22
- Issues: No mortgage; lack of prices & reporting inconsistencies (different prices for same transaction)

Activities/results

- Law #2698-IX amendment (April 23; WB DPO) & CMU resolution #474 (May '23) to clarify scope
- APIs tested to check on data inconsistencies; analysis of land market performance published
- Agreement to publish sales prices for at least 80% of transactions after June 1 2023 (WB DPO)

Next steps

- Ensure consistency & coverage in DZK reporting (incl. rentals/mortgages) since start of land market
- Discuss & sequentially address data problems with DZK/SGC/NAIS
- Once data ok, assist DZK to improve monitoring portal (GUI & geographic disaggregation)
- Expand coverage to include courts and planning

5. SGC reform: HW/SW assessment & new design

Background

- SGC reform is priority for land reform implementation
- Key issues: SLC IT system; incomplete, inaccurate, transparency issues, data & system security

Activities

- Completion & presentation to DZK & SGC findings technical assessment of SLC hardware (HW), software (SW) and IT systems– agreement to re-engineer DZK system (used for SLC)
- Established multi agency working group to supervise & guide development “SA DZK NOVA”;
- Procurement firm to prepare ToR for DZK Nova (actual development to be procured by govt.)
- Prepared technical specs to tender urgent hardware DZK for cadaster – procured by EU
- INSPIRE gap analysis / NSDI to be in line with EU Accession

Next steps

- Complete DZK Nova ToR development; complete data inventory with DZK support
- Identify & close any regulatory gaps related to development and functioning of DZK Nova
- Adjust regulations to get fully in line with INSPIRE & more recent EU Directives

6. Crop monitoring using remote sensing

Background

- Develop methodology and pilot using remote sensing for crop monitoring and yield prediction since 2017, using AI, econometrics with Kyiv Polytechnic Institute (KPI) & JRC
- Nation-wide coverage for major crops (2020); test other crops and wetlands 2021
- Applied for assessment impact of war on winter & summer crop area (2023); publication forthcoming

Activities/Results

- Crop maps 2022; winter & summer 2023 publicly available on MAPF [geoserver](#).
- Continuous assessment of war-induced damage to agricultural land
- KPI developed capacity building plan for MAPF (with support from other WB TF and JRC)

Next steps

- Consolidate technical research capacity crop monitoring in KPI; policy analysis capacity in MAPF
- Refine yield prediction methodology & explore new applications (e.g. war impact on protected areas)
- Compare to Synergize maps & provide information to hromadas to increase land-based revenue

Descriptive evidence from crop maps

	Summer crops					Winter crop				
	Nat. mn. ha	VCs damage 23 Y	VCs damage 22 N	VCs damage 23 Y	VCs damage 22 N	Nat. mn. ha	VCs damage 23 Y	VCs damage 22 N	VCs damage 23 Y	VCs damage 22 N
2019	17.885	3538.7	1598.3	2830.1	1632	9.422	2,271.3	816.1	2,013.4	897.9
2020	18.258	3451.8	1640	2819.1	1669.8	7.507	2,074.4	625.2	1,726.8	710.4
2021	17.232	3117.5	1555.2	2548.4	1582.2	9.453	2,493.3	798.6	2,051.4	899.7
2019-21	17.791	3369.3	1597.8	2732.5	1628.0	8.794	2,279.7	746.7	1,930.5	836
2022	17.056	2362	1576.9	1810	1605.1	8.375	2,090.4	718.7	1,702.1	801.8
2023	18.124	2246.6	1689.4	1966.9	1703.2	6.756	1,251.7	620.9	819.9	669.5
Diff ha	0.332	-1122.7	91.567	-922.533	-22.900	-2.038	-1,028	-125.8	-228.4	-34.2
Diff %	1.87	-33.32	5.73	-33.76	-1.41	-23.18	-45.09	-16.84	-11.83	-4.09
No. VCs.	10,556	522	10,034	549	10,007	10,002	865	9,137	395	9,607

Econometrics to control for climate etc.

Estimating equation (v = village) for winter crops

$$Y_{vt} = \alpha_v + \beta CI_{vt} + \gamma X_{vt} + \lambda_t + \varepsilon_{vt}$$

- Y_{vt} : Area cultivated w. winter or summer crop
- X_{vt} : Time-variant village attributes (GDD & rain planting & growing & higher order terms)
- CI_{vt} : Conflict indicator (area damaged/index) – direct conflict effect
- λ_t : Time dummy – $t = 2022/3$ gives upper bound on indirect (macro) conflict effect
- For summer crops add winter crop area in t to X_{vt} to allow for complementarity/substitution

This allows constructing counterfactuals at village level

- No conflict and no macro effect (with or without weather)
- Can be aggregated in whatever way useful - paper for winter crops 2022 [here](#)

Counterfactual production area (mn. ha)

		Total	VCs with damage?		Russian occupied
			No	Yes	
Winter 22	No conflict	9.35	6.41	2.94	1.92
	Direct loss	0.14	0.00	0.14	0.07
	Total loss	0.97 (10.4%)	0.68	0.29	0.14
Summer 22	No conflict	19.72	14.37	5.35	3.00
	Direct loss	1.06		1.06	0.80
	Total loss	2.57 (13.0%)	1.21	1.36	0.94
Winter 23	No conflict	8.76	6.07	2.69	2.08
	Direct loss	0.48		0.48	0.39
	Total loss	2.01 (22.9%)	1.33	0.68	0.53
Summer 23	No conflict	20.72	17.40	3.32	2.23
	Direct loss	0.389		0.389	0.309
	Total loss	2.60 (12.5%)	2.00	0.594	0.450

7. Farm survey

Background

- Need for evidence on war impact on agric. production by size and region
- SAR as sample frame for small & medium survey; questionnaire administered via phone

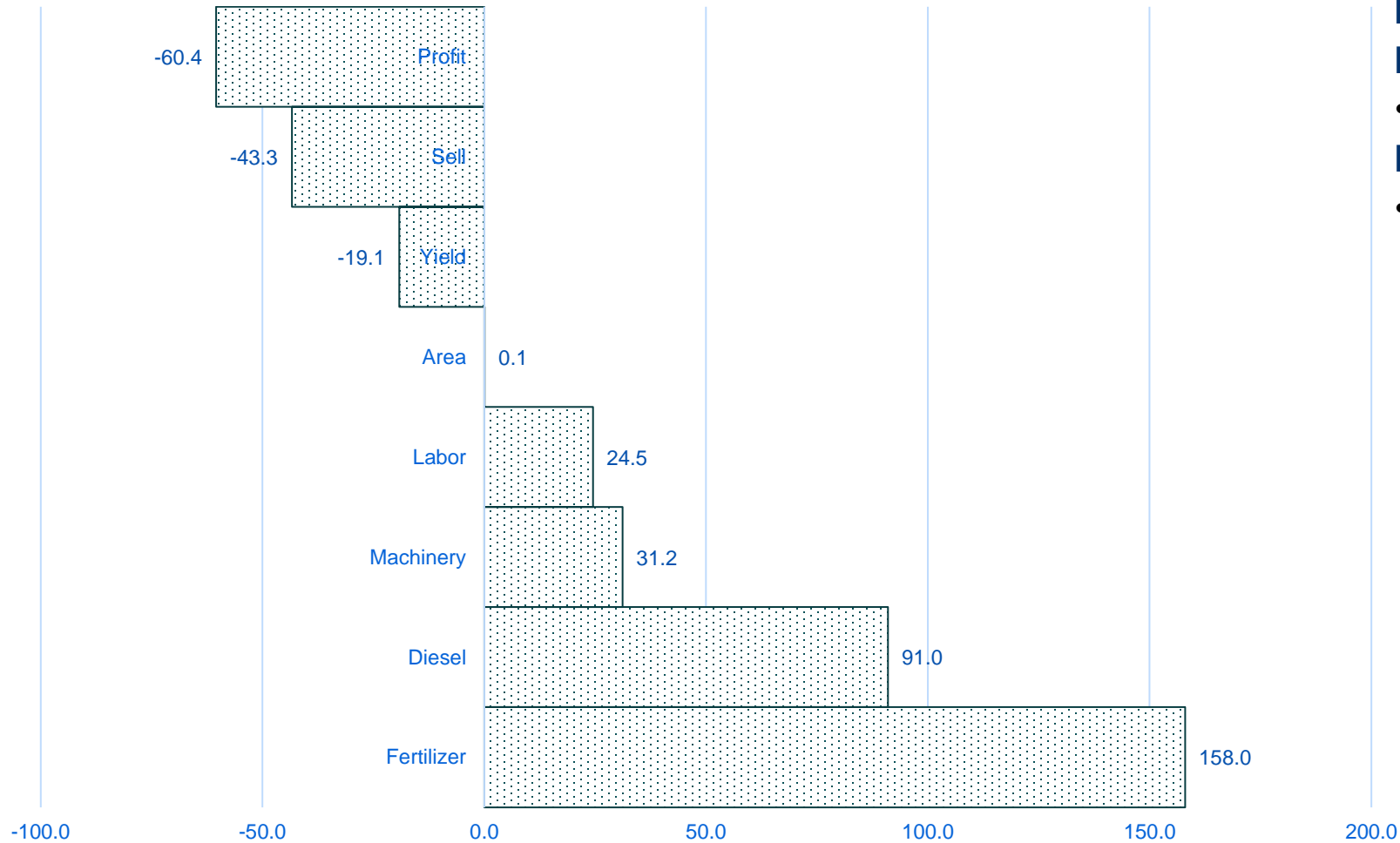
Activities/ Results

- 2,200 small/med farms covered (Oct 22-Jan 23); large farms (> 1000 ha) high non-response
- Small farm analysis completed and results [published](#); data available on WB [microdata library](#)
- Negative cash flow due to increased input costs & lower farm gate prices
- Difference in working capital access across farm types; increase in oilseeds (ease of marketing)
- Inputs into policy dialogue on small & medium farms & use to design agricultural programs

Next steps

- Follow-up survey in fall 2023 to assess spring crop/PSG effect/scope for diversification
- Requires data (Form 50 & 29) on formally registered farms from Ukrstats to compare war effects

Farmers caught by input-output price scissors



Increased transport & logistic cost due to war

Prices for inputs increased

- Especially for tradable ones

Prices for outputs dropped

- Market access an additional problem

Changes in input prices and yields, market participation, and profits

8. Support to MAPF communication and outreach

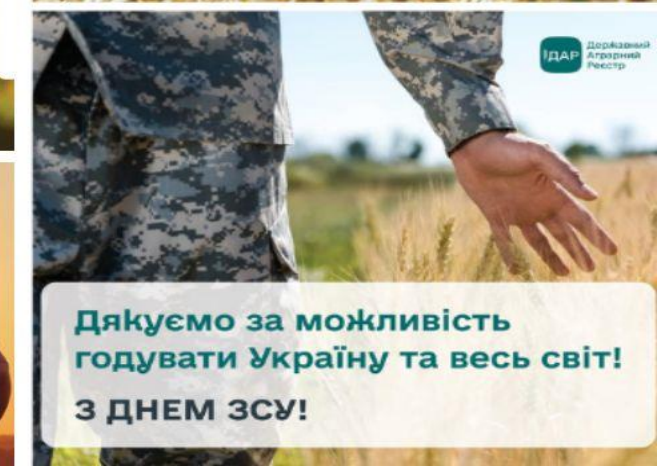
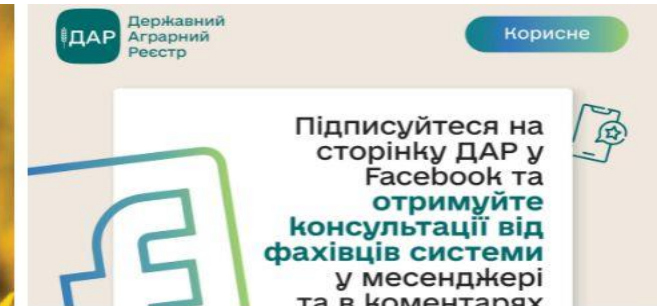
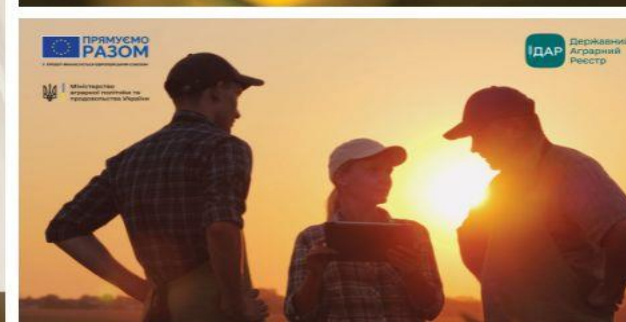
Activities /results

- Supported MAPF information & communication of SAR, SAR website w. social media;
- Capacity building support to MAPF: Organized 6 trainings & high-level public event on SAR results
- Extensive training of staff from Ministry, donors, and banks on SAR use for program implementation
- Successful outreach on SAR and PSG to over 500 OTGs and farmers

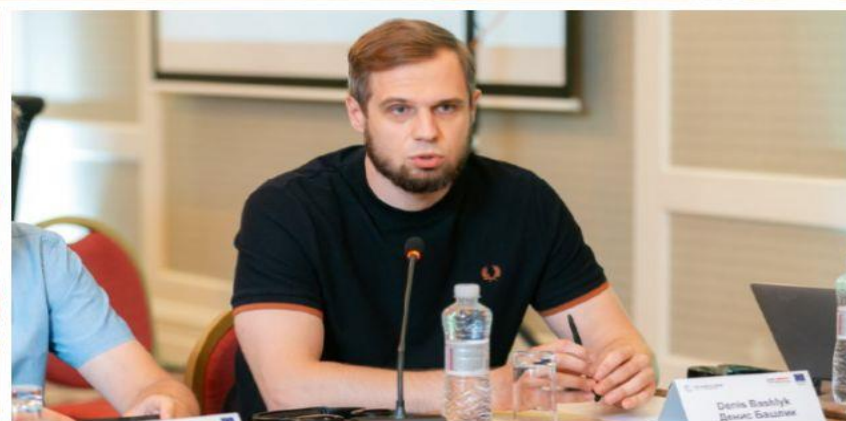
Next steps

- Training of banks, SNAPs, PCG staff
- Building capacity in private sector
- Targeted outreach to lagging OTGs to teach them how to encourage SAR registration
- Outreach to hromadas to highlight use of SAR data for planning & revenue generation

Examples of communication materials



High level event on PSG results



Priority activities for coming 6 months

Support to land reform implementation

- Ensure technical readiness for land market opening to legal entities
- Agree w. SGC on CAMA formula & data (plans, infra, structures) to meet ACLIP & EU requirements
- Move towards publicizing data & integrating market-based valuation in tax code
- Use SAR strategically to reduce cost of mortgage lending

Implement comprehensive land governance monitoring

- Resolve land price monitoring issues w. MAPF & follow up with NBU on haircut once this is done
- Elaborate strategy to fill data gaps (courts, structures) & increase data quality
- Assist DZK in expanding monitoring portal (potential RETF)

Expand the legal & technical basis for SAR to support private sector interaction & state support

- Legally establish SAR as an independent registry & source of official data
- Develop API courts/ fiscal; services; pilot SAR use with banks and agric input suppliers
- Ensure SAR meets EU paying agency transparency/auditability requirements & all support via SAR
- Finalize & deploy software to ensure automated checking of land use
- Pilot ways of using donor money or state support to leverage private finance, including via PCGF

Priority activities for coming 6 months

Support SGC reform

- Complete DZK Nova design and implementation strategy; Identify regulatory adjustment needed
- Complete INSPIRE/ NSDI gap analysis & agree w. SGC on aligning regulations with EU requirements
- Assess requirements for DZK Nova & mass valuation implementation & ways to cover them (RETF)
- Identify ways to ensure full interoperability w. registry & associated financing needs (RETF)

Improve MAPF capacity for land use monitoring & agric. sector analysis

- Conduct MAPF RS training & use land use validation to improve ML model quality
- Combine with statistical (Ukrstats) & admin. (NBU) for sectoral policy analysis & design
- Complement w. small/med. producer survey to assess diversification scope & past program effects

Design & assess new ways to improve Ukraine's agric. sector performance incl. via donor support

- Use SAR to reduce transaction costs in rural credit & factor markets: ↑competition & ease of access
- Facilitate innovation by private sector & leverage private finance via PCGF (WB/EU)
- Adjust criteria/matching requirements for PSG2 (EU) & assess impact compared to 5-7-9

Thank you!

K. Deininger with inputs from D. Ali, R. d'Andrimont, M. Claverie, M. Fang, T. Hilhorst, T. Khorzovskaya, N. Kussul, G. Lemoine, A. Martin, D. Manzhura, O. Nivievskyi, V. Popov, F. Sedano V. Strakhova, A. Shelestov