Support for low carbon agriculture - able to adapt to observed climate change in the perspective of 2030 and 2050

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Instytut Uprawy
Nawożenia i Gleboznawstwa

The main objective of the project is to improve resources use efficiency by implementing innovative low carbon farming practices and promotion sustainable use of mineral fertilizers in Poland.

The project partners

Instytut Uprawy Nawożenia i Gleboznawstwa

PUŁAWY

Instytut Agrofizyki im.Bohdana Dobrzańskiego Polskiej Akademii Nauk

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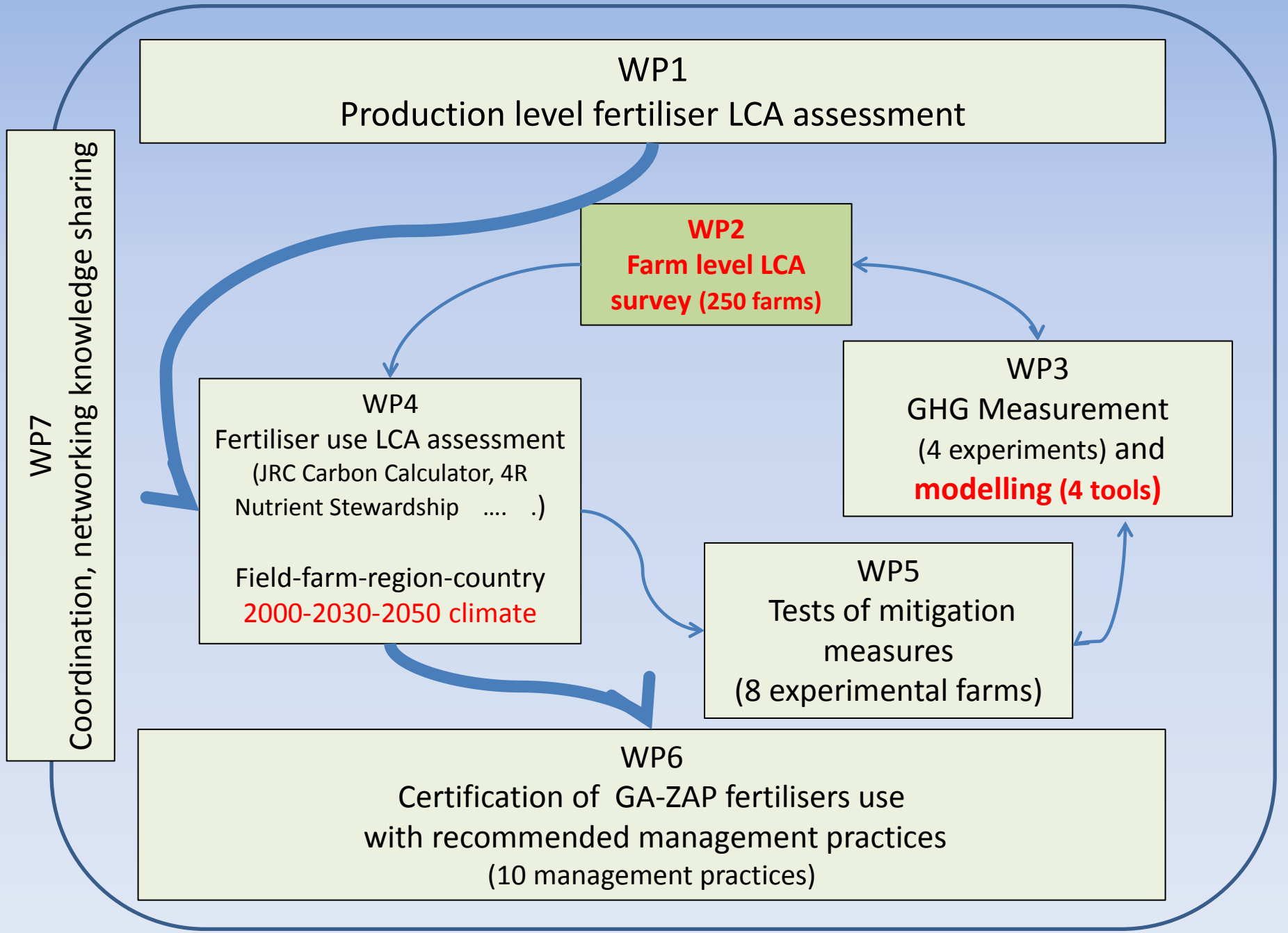
INSTITUTE OF ENVIRONMENTAL PROTECTION – NATIONAL RESEARCH INSTITUTE


WP1
Production level fertiliser LCA assessment
WP7
Coordination, networking knowledge sharing
WP2
Farm level LCA
survey (250 farms)
WP3
GHG Measurement
(4 experiments) and
modelling (4 tools)
WP4
Fertiliser use LCA assessment
(JRC Carbon Calculator, 4R
Nutrient Stewardship .... .)
Field-farm-region-country
2000-2030-2050 climate
WP5
Tests of mitigation
measures
(8 experimental farms)
WP6
Certification of GA-ZAP fertilisers use
with recommended management practices
(10 management practices)

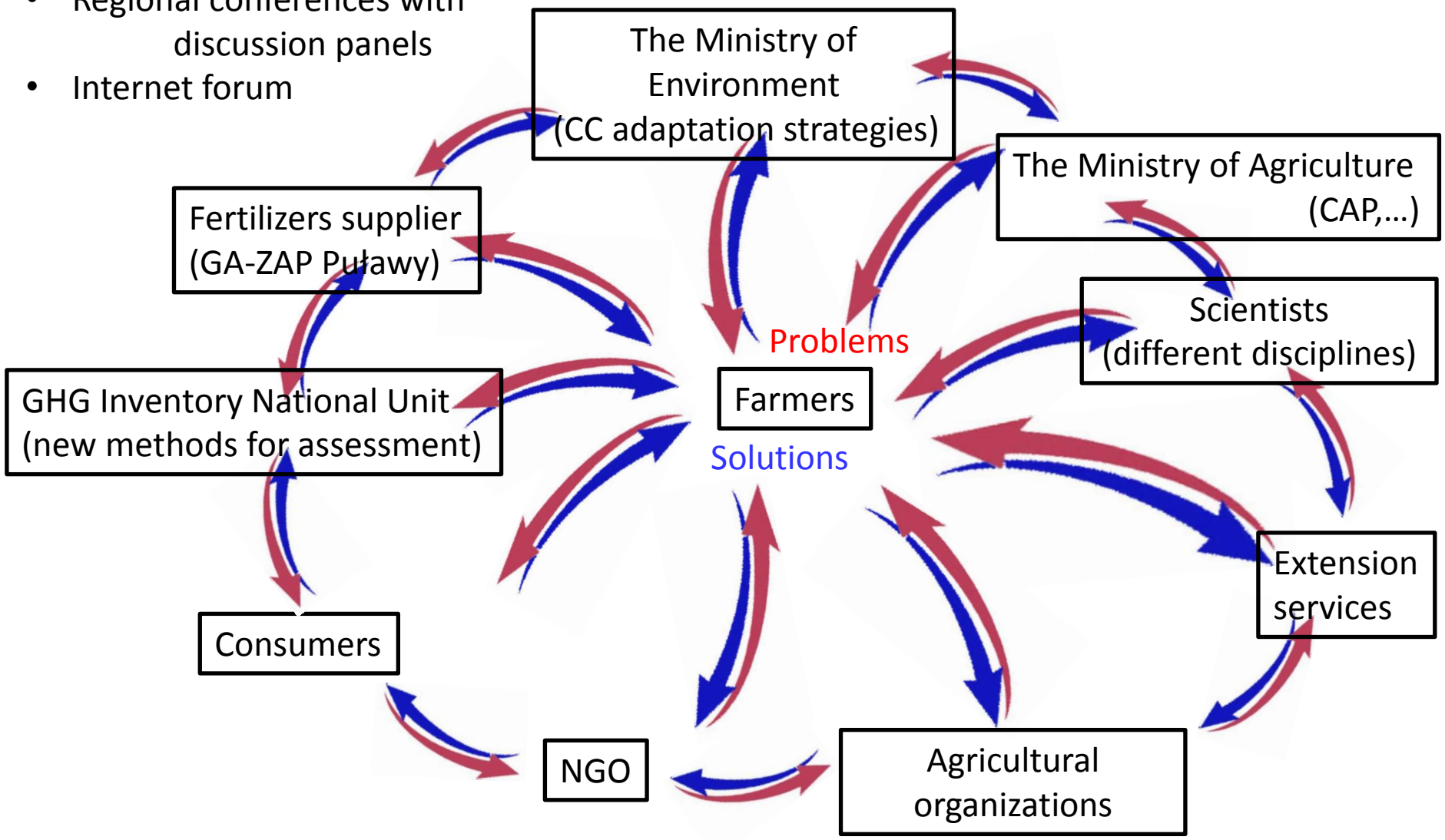
LCagri
low-carbon farming practices

- **(LC1)** Assessment tools within 4R Nutrient Stewardship scheme.
- **(LC2)** Use of IUNG DSS computer tools for N optimisations (Nitrogen balance on the farm)
- **(LC3)** Tailor N application according to actual crop needs.
- **(LC4)** Promotion of in-depth incorporated fertilizer placement method
- **(LC5)** Abandoning autumn N dose..
- **(LC6)** Crop diversification with special focus on introduction of leguminous plants on arable land.
- **(LC7)** Implementation of cover crops.
- **(LC8)** Conservation agriculture practices. Strip seeding tillage system will be introduced and cultivation with seeder for the direct seeding.
- **(LC9**) Precision agriculture methods.
- **(LC10)** Reduced N fertilisers use on protected areas.

LCAgri participatory approach

Methods:

- Workshops with farmers and advisors (september 2015 – 120 participants attended)
- Regional conferences with discussion panels
- Internet forum



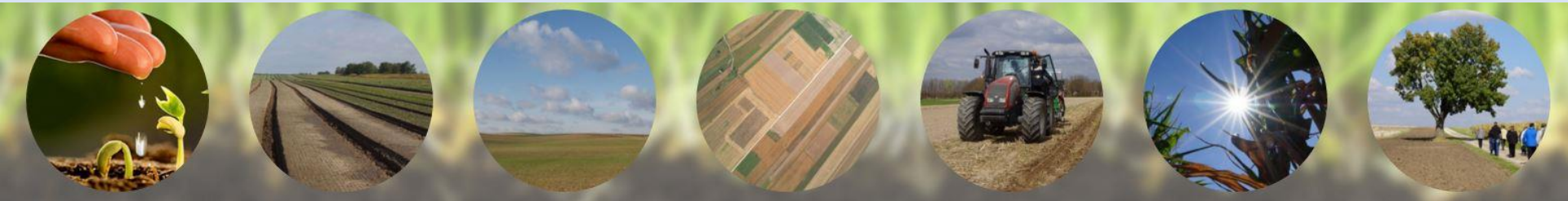
WP 2

Existent agricultural practices will be evaluated under present climatic conditions and using climatic scenarios for 2030 and 2050 time horizons

<u>The tools used</u>:

C Calculator V2-26 Solagro
Agro-C
DNDC
C-Tool

WP3 – modeling
WP4 – climate scenarios
WP7 – Stakeholders involvement



LCAgri

WP2

Farms survey:

Carbon footprint of current farming practices

CC adaption potentials of three groups of farms in Poland

Number of farms: 250

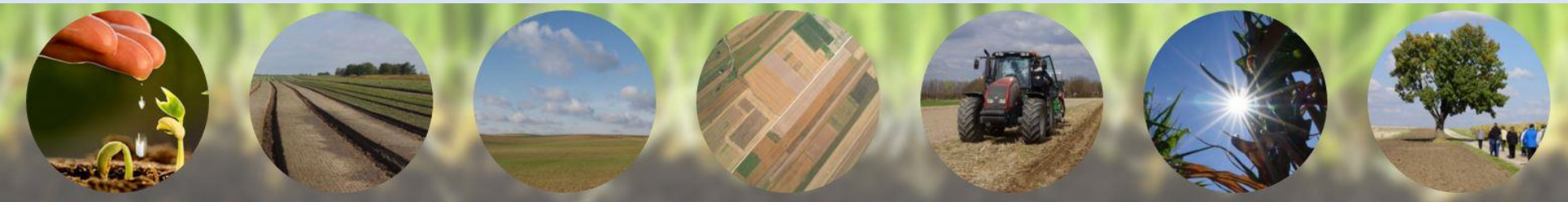
Farms groups:

- **Plant production**
- **Plant production + dairy farming**
- **Plant production + pigs keeping**

Number of regions in Poland: 16

Size of farms in the groups and regions :

(small- 1, medium – 2 or 3, large - 2)



WP 2

The survey structure:

A. General information on farms

- Farms size, leguminous crops share in plant production, cover crops share, grasslands share, cattle, pigs number etc.

Crops in rotation (1-6)

B. Soil properties and production capacity

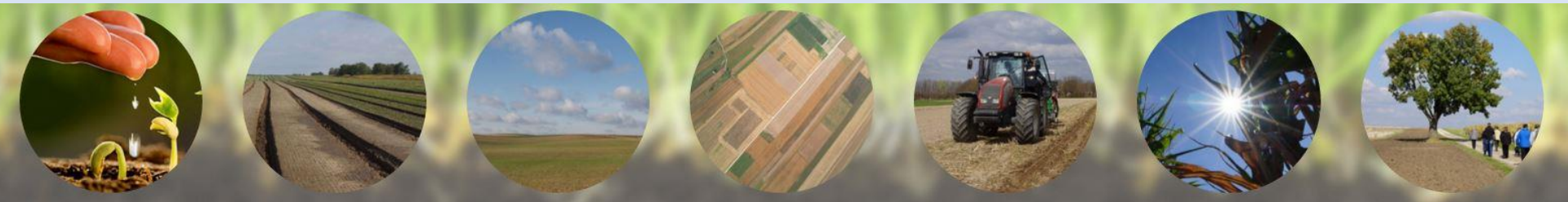
C. Fuel use and workhours

D. Mineral fertilizers use

F. Organic fertilizers use

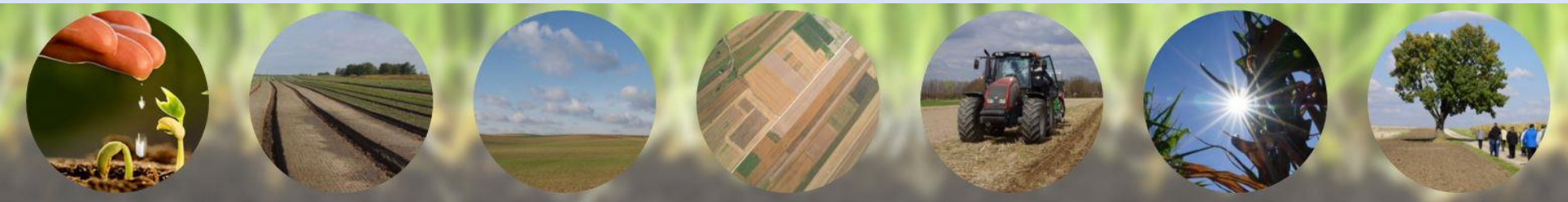
G. Plant protection

H. Irrigation



Main assumptions

- Two years of data collection: 2016, 2017
- Strong collaboration with farmers and advisors (survey makers)
- Surveys performed by skilled advisors within FADN system link to economic analysis
- There is a space to include XC6 MACSUR 2 tools and recommendations in the planned work including surveys

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