

POTATO COLLECTION IN LATVIA

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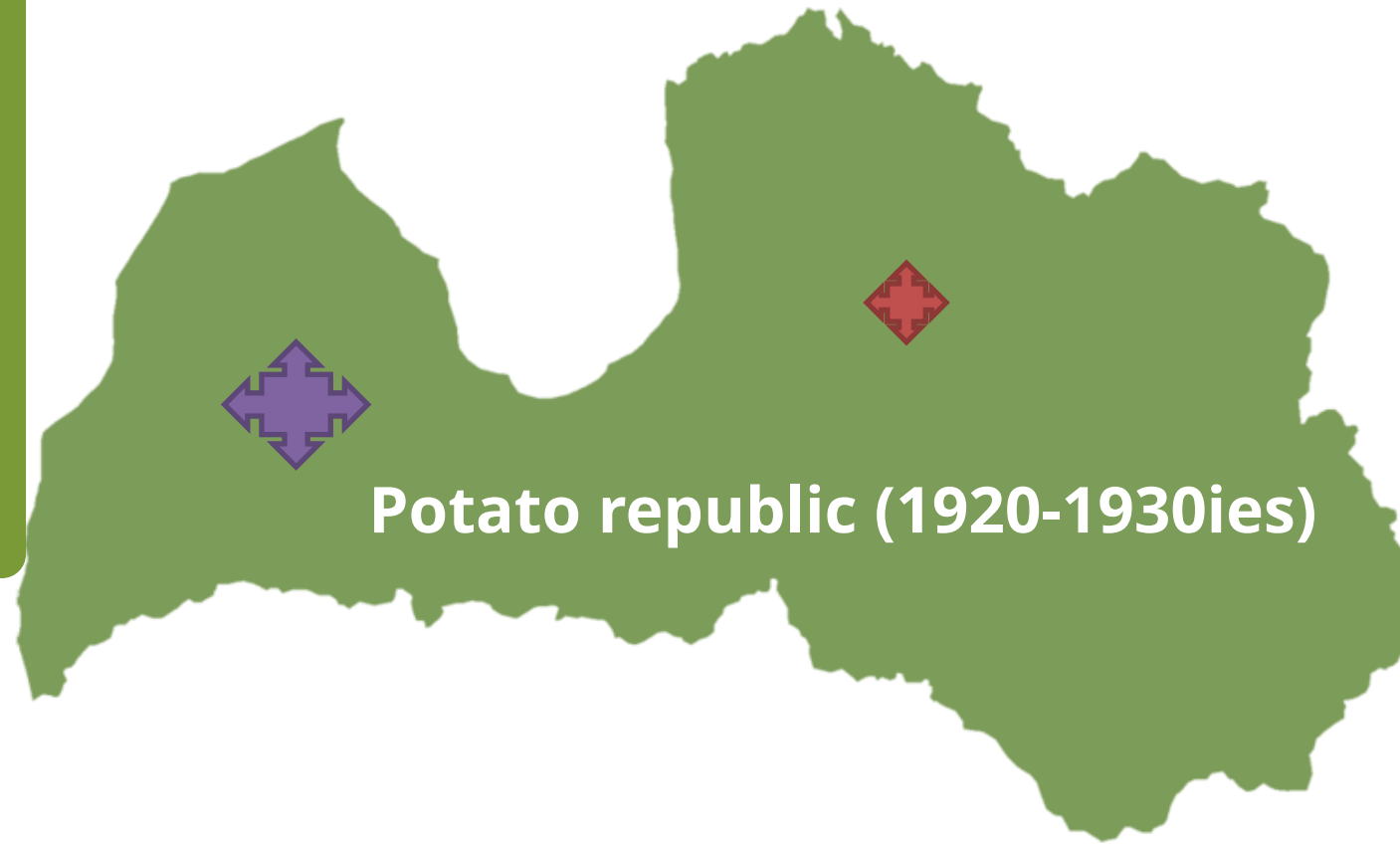
ECPGR Euro-Potatoes kick-off,
March 19-20, 2024

Potatoes in Latvia



<https://lr1.lsm.lv/lv/raksts/sis-dienas-aciim/kurzemes-un-zemgales-hercogs-jekabs-ketlers.a55672/>

1673 Duke Jakob of Courland receives *kartoffel* from Hamburg



18th-19th century – various promotion measures

wider cultivation of potatoes begins

1838

In Priekuļi crown manor
119 potato varieties
tested

From the agricultural yearbook of Vidzeme, published in Dorpat in 1839



Potato breeding in Latvia



Since **1913** **Peteris Knappe**

1923 – Erihs Knape

1931- today **Priekuļi** (AREI)

1913. – Priekuļi breeding station

PRIEKUĻI –
47 potato varieties registered.
Not all survived



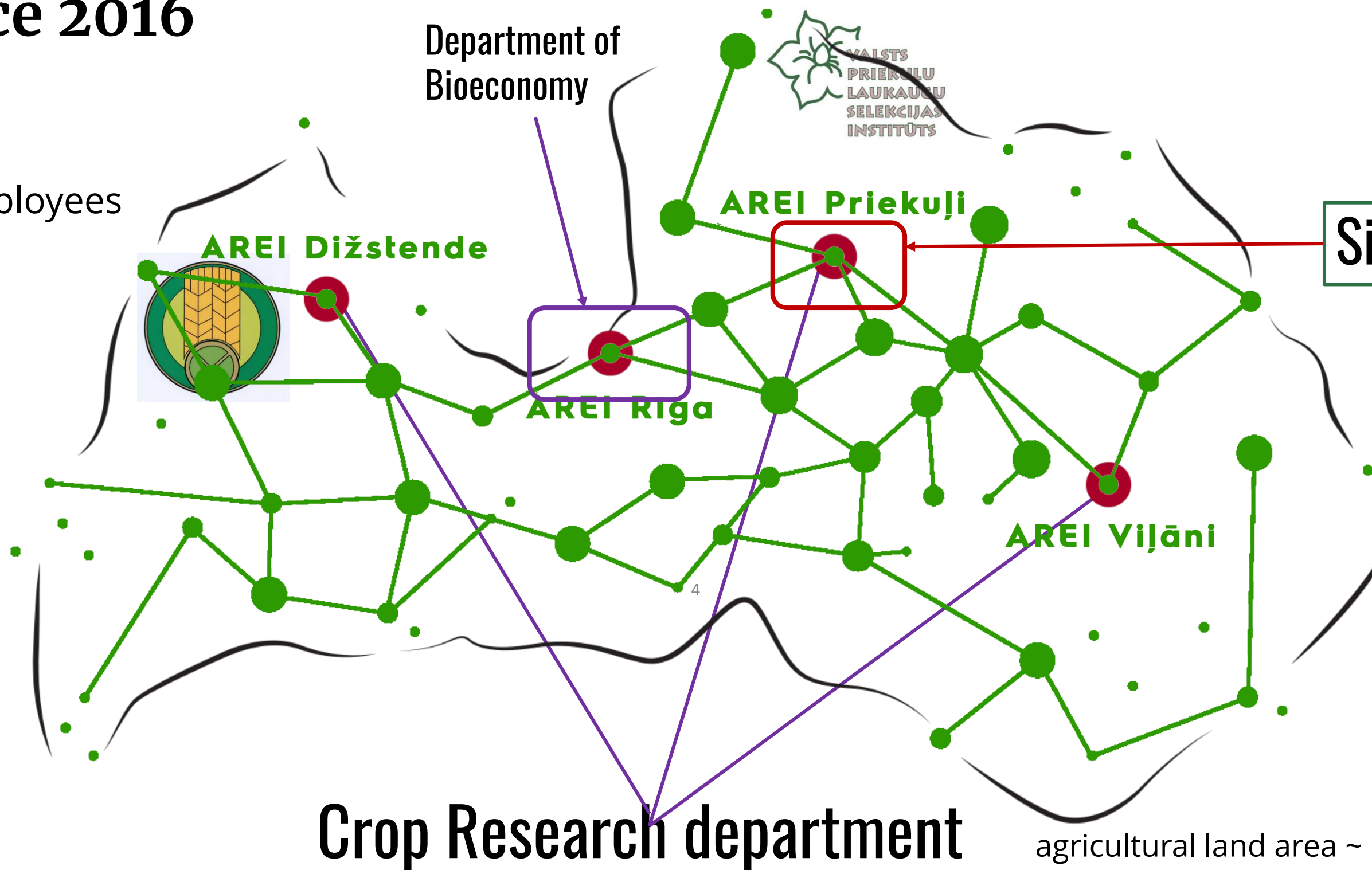
I.Dimante

Other potato breeding programs, including private ones

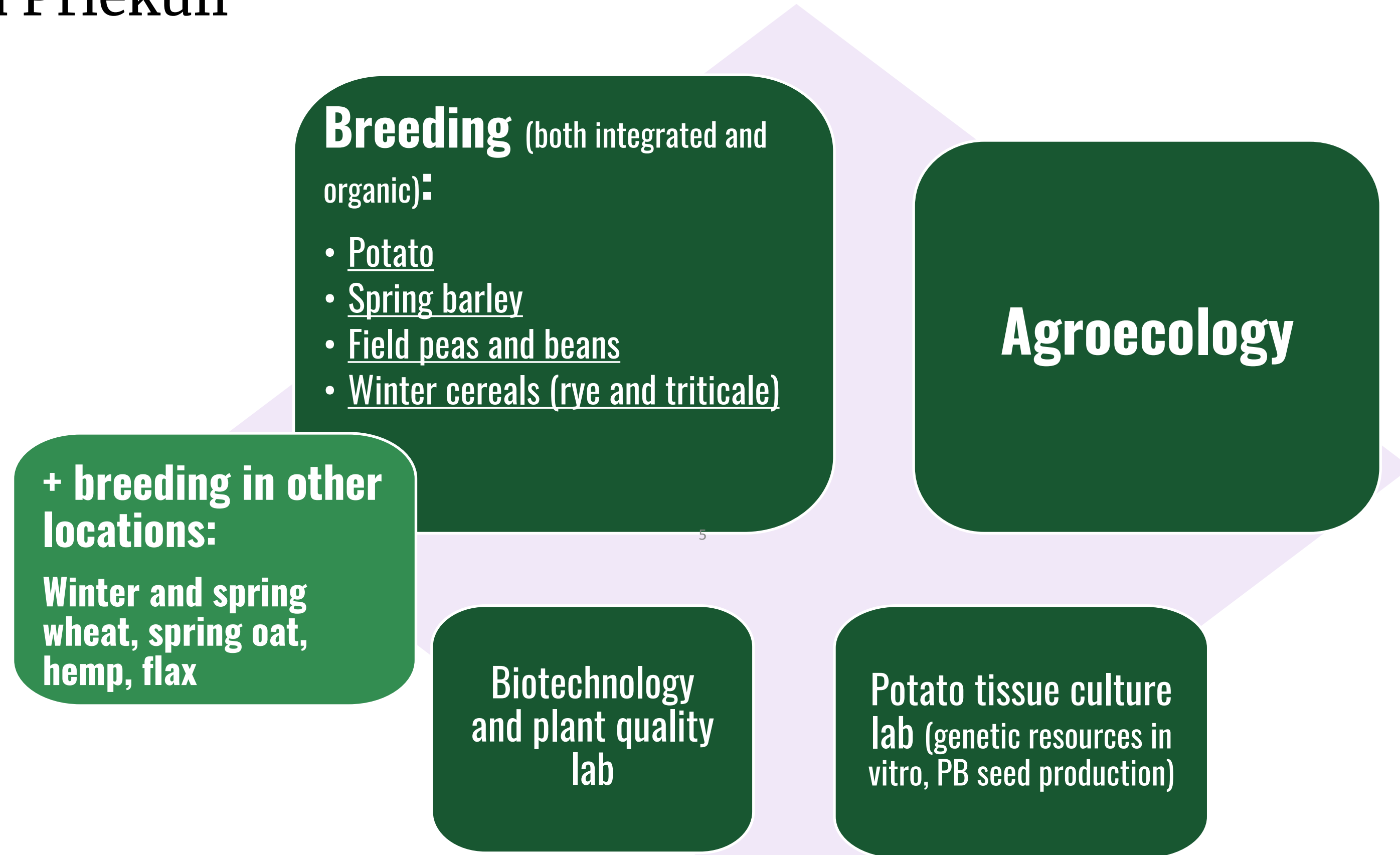
Institute of Agricultural Resources and Economics (AREI)

Since 2016

~ 170 employees

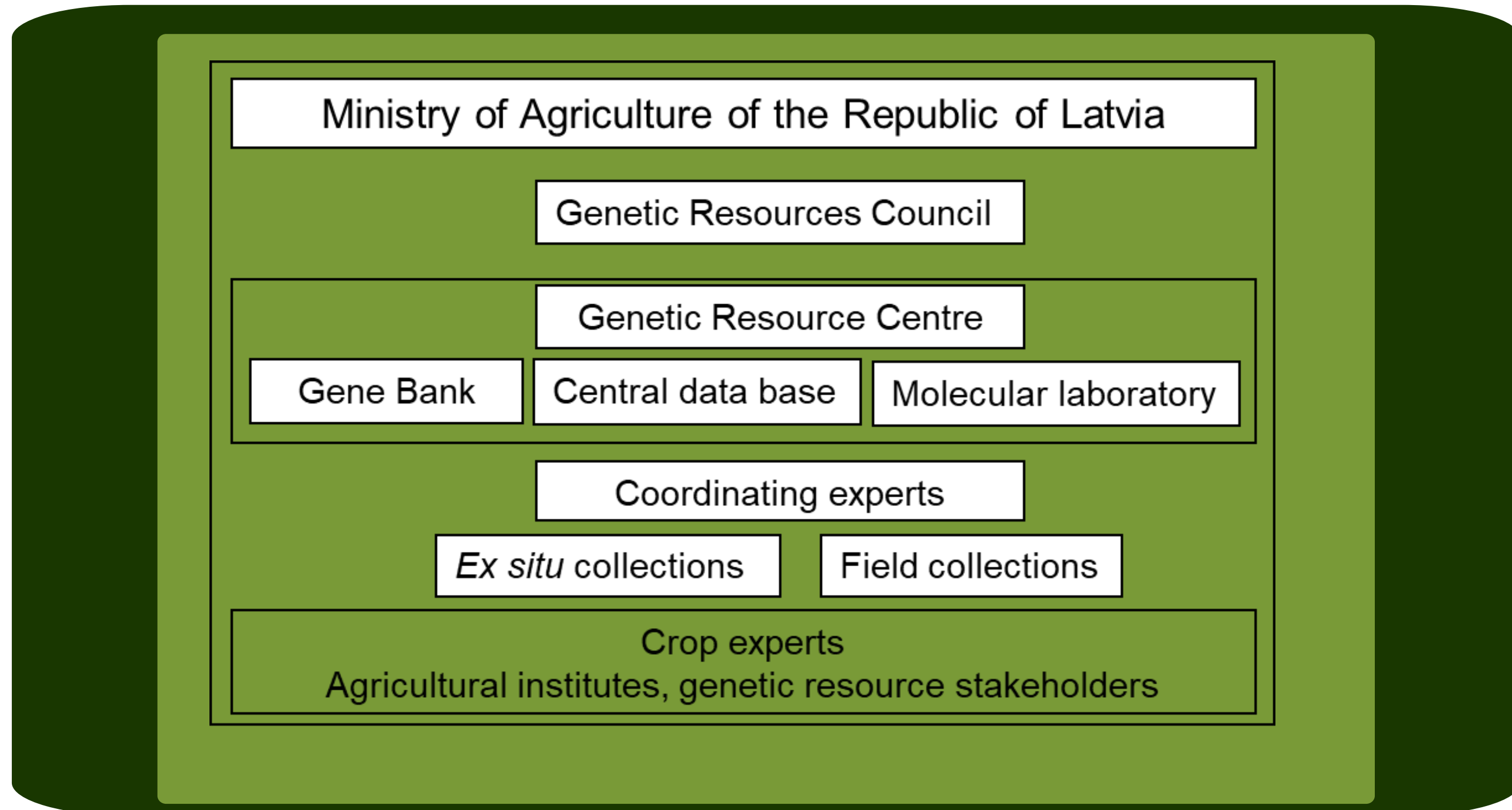
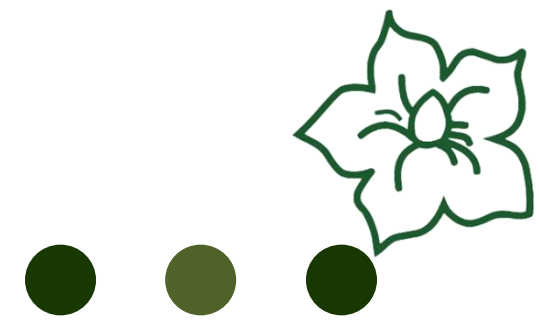


Main research directions in Priekuli



GR management structure in Latvia

decentralized



PGR management structure in Latvia

decentralized



Long term conservation of seeds of
68 species from 43 genera

The Latvian Gene bank (Salaspils)

Field collections in
several locations

Potato GR field
and in vitro
collection (Priekuli)

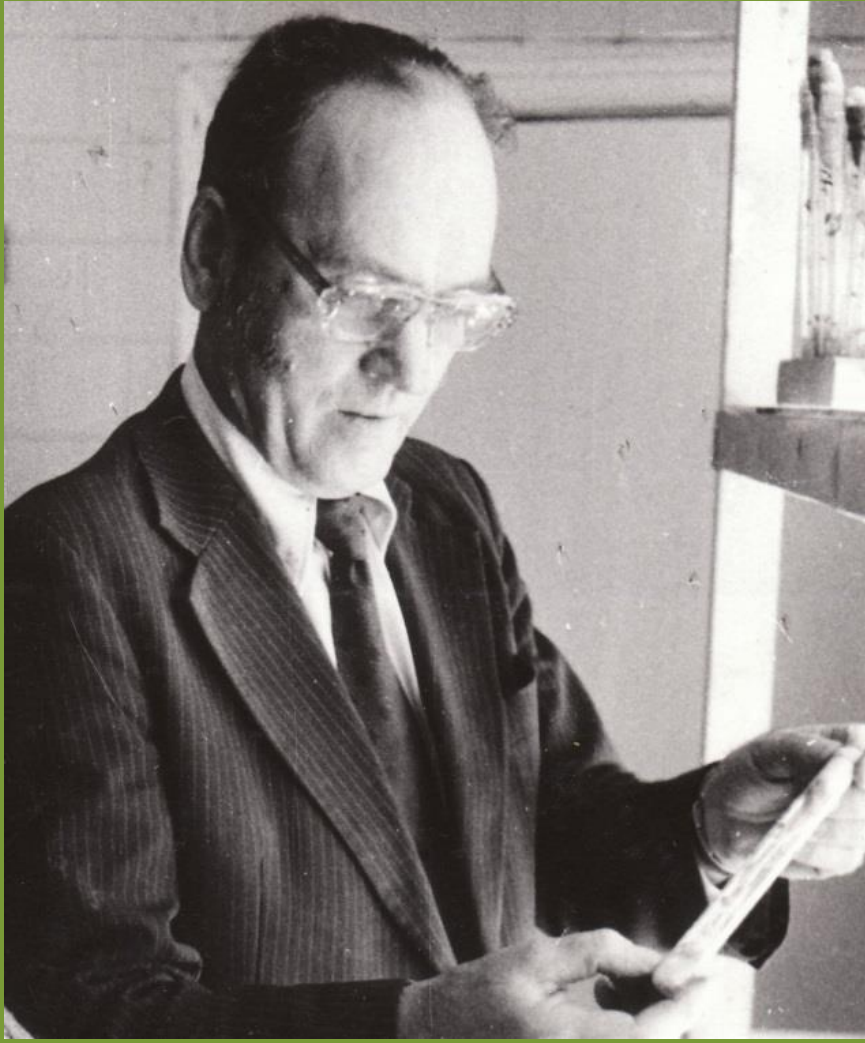




Formation of potato in vitro collection

1963

Uldis Miglavs



1978

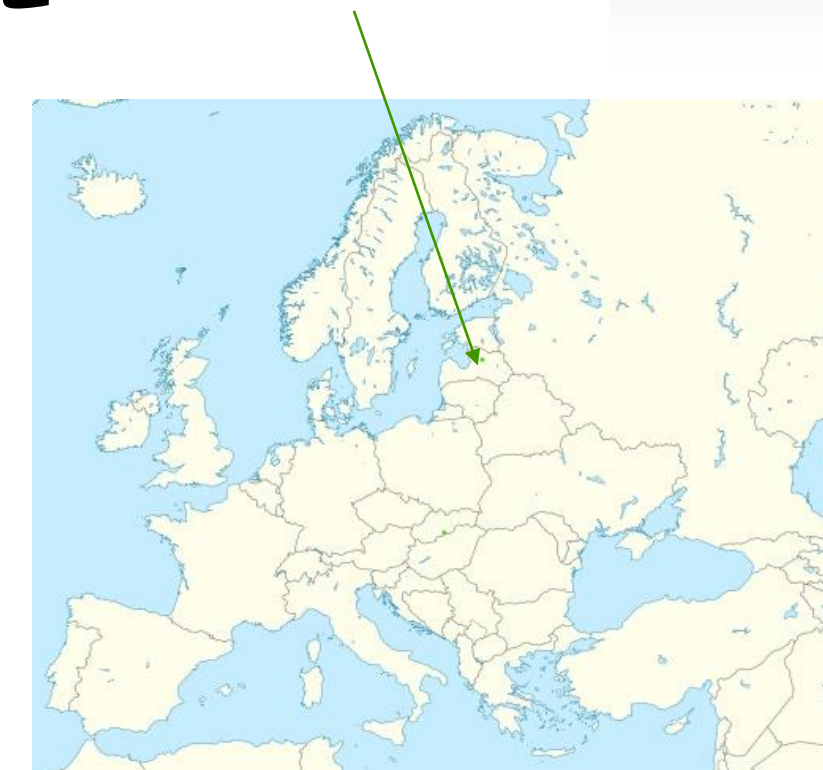
Priekuļi potato tissue culture lab





Potato GR in Latvia

Potato breeding group and
Potato tissue culture
laboratory,
**Institute of Agricultural
Resources and Economics
(AREI), Priekuļi, Latvia**



The mandate of the LGB is long-term conservation of
PGR of Latvian origin

Potato GR in Latvia

Latvian potato genetic resources by category

	Field collection	Duplicates <i>in vitro</i>
Commercial cultivars	51	51
Landraces	12	12
Breeding clones	95	95
Repatriated accession	1	1
TOTAL	159	159

+ ~ **285 genotypes** - other breeding clones and varieties in field and *in vitro* collections, but not included in potato genetic resources collection

59 genotypes described according to plant descriptors



Potato GR in Latvia



Only 85 entries from LV

Potato GR in Latvia

16 tubers per genotype

70 tubers per genotype for storage



1-3 mericlones per genotype.

Each mericlone – 4 duplicates



Potato GR in Latvia



Conservation

Breeding

Research

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kick-off,
03/2024



Assessment of genetic diversity and relatedness in the Latvian potato genetic resources collection by DArT genotyping

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Abstract

Potato (*Solanum tuberosum* L.) has been cultivated in Latvia since the 17th century, and formal breeding programmes have been established since the start of the 20th century. The Latvian potato genetic resource collection consists of 83 accessions of Latvian origin, including landraces, old cultivars released starting from the 1930's, modern cultivars and breeding material. These are maintained in field and *in vitro* collections. Pedigree information about the potato cultivars is often limited, and the use of hybrids of local cultivars as parents is common in the Latvian potato breeding programme. Ninety-four Latvian potato varieties and breeding lines and some commonly used foreign accessions were genotyped with the potato DNA diversity array technology. Analysis of the Latvian potato genetic resources collection revealed that the amount of genetic diversity has increased in the modern cultivars in comparison with the old cultivars.

Keywords: breeding; DArT; diversity; fingerprinting; genetic resources; potato

Genotyping

The genetic diversity parameters lower in the old cultivars than in the modern cultivars (after 1970)

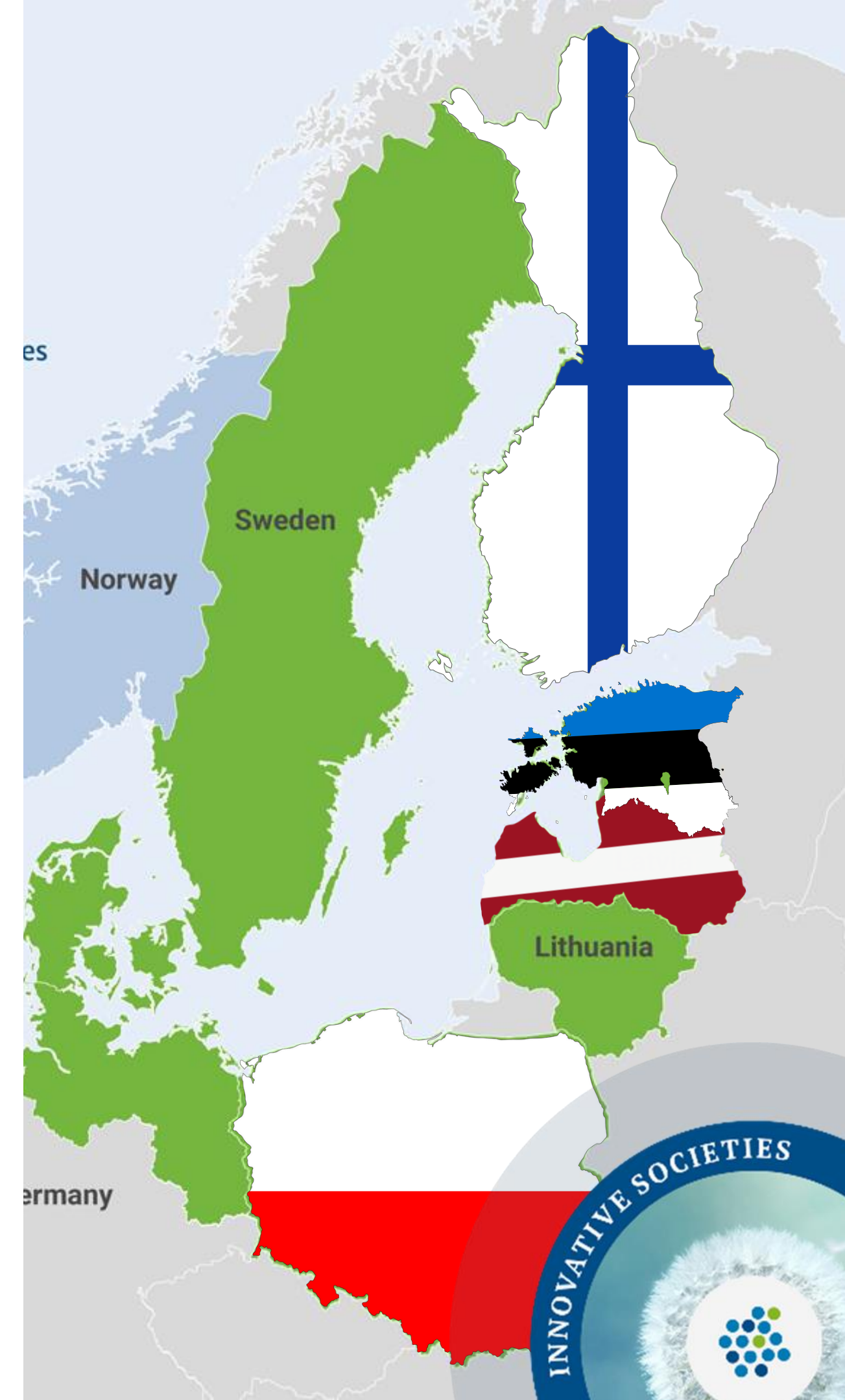
the combination of locally adapted cultivars with donors of specific resistance and other traits has been successful, and has increased the amount of genetic diversity within Latvian potato cultivars without causing a shift in the population away from locally adapted germplasm.



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growing and consumption **HERITAGE** in Northern Baltic
region to build up
RESILIENT COMMUNITIES





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MainPotRe activities



Conservation (heritage) varieties

*Registration, seed
marketing*



Toolbox for potato plant material deposition in and distribution from gene banks



New strategies for local varieties marketing

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Interreg
Baltic Sea Region



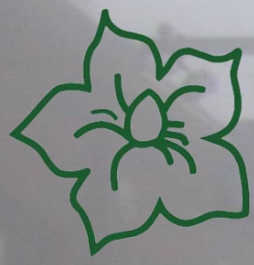
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MainPotRe activities



AMATEUR AND HOBBY
GARDENERS =SMTA??

NordGen solution? – not
all governments agree

**Toolbox for potato
plant material
deposition in and
distribution from
gene banks**

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**Society enjoys the topic,
and society is captivated
by discussions about
heritage cultivars**

Seed health issues less important ☹️

**In Latvia people recognize few
old Latvian varieties by name
Few know about genetic
resources collection**



Discussions



POTATOISM





Potatoes Unite (01/03/2024)

Events



Kartupeļu un siera kroketes





Most 'popular' heritage varieties ● ● ●



Early Rose



Agrie rožu (GR)

Jānīši, Ātraudži

11 accessions collected previously

Phenotypically=Early Rose

Discussion in social media

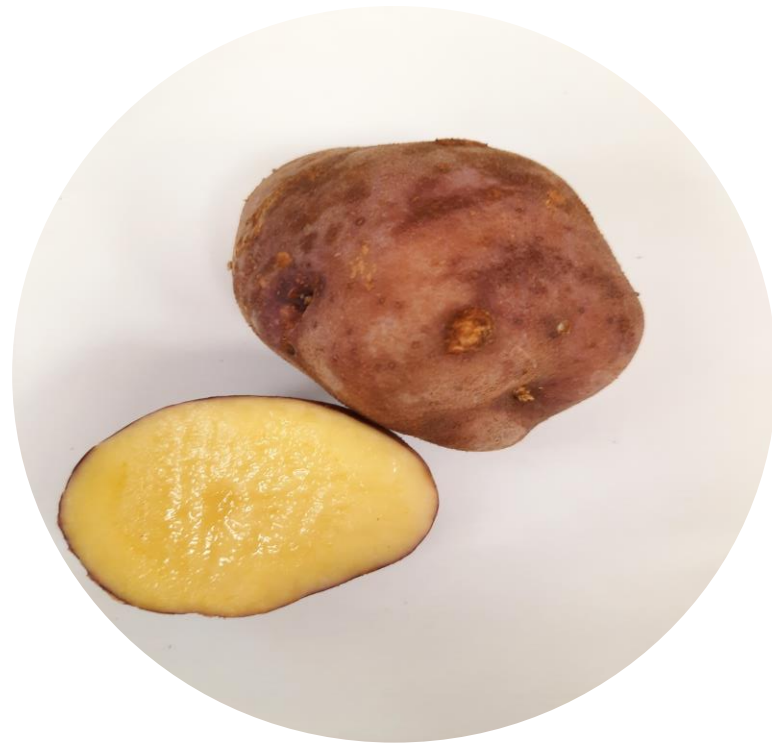


Most 'popular' heritage varieties



Grāpji, Grāpīši

Discussion in social media



Zeeuwsche Blauwe



Grāpīši (no Balviem)



Grāpji (Alberta)



Most 'popular' heritage varieties

'Mysterious' one



Kubuļu (Zojas)

Kubuļu Zojas



Vietējais Kardināls

Vietējais Kardināls



Šetlandes melnais

Šetlandes melnais





Some more 'landraces'



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Thank you!



EURO POTATOES, 2024



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