

SPOKE 1

Risorse genetiche vegetali, animali e microbiche e adattamento ai cambiamenti climatici

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Agritech Strategic Objectives

Technologies
for
sustainable
agriculture



01 RESILIENCE

SPOKE 1

Plant, animal and microbial genetic resources and adaptation to climatic changes

SPOKE 2

Crop Health: a multidisciplinary system approach to reduce the use of agrochemicals

SPOKE 3

Enabling technologies and sustainable strategies for the smart management of agricultural systems

SPOKE 4

Multifunctional and resilient agriculture and forestry

SPOKE 5

Sustainable productivity and mitigation of environmental impact in livestock system

02 LOW IMPACT

SPOKE 8

New models of circular economy in agriculture through waste valorization and recycling

03 CIRCULAR

SPOKE 6

Management models to promote sustainability and resilience of agricultural system

SPOKE 7

Integrated models for the development of marginal areas

04 RECOVERY

05 TRACEABILITY

SPOKE 9

New technologies and methodologies for traceability

SPOKE 1



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Spoke 1 studies agricultural and forestry genetic resources at different levels to identify traits useful for adapting to climate change and improving the environmental sustainability of agricultural systems

Lo **SPOKE 1** è un pacchetto organico e integrato di azioni finalizzato ad una gestione avanzata delle risorse genetiche

Spoke Leader: CNR

1 - Plant, animal and microbial genetic resources and adaptation to climatic changes

WP

1.1

Plant, animal and microbial genetic resources: mining for resilience

1.2

Dissecting morpho-physiological and molecular mechanisms of adaptation

1.3

Developing advanced genotypes with improved resilience

GOAL

Disclose genetic diversity underlying adaptation
(CHARACTERIZE)

Identify mechanisms and players of resilience
(UNDERSTAND)

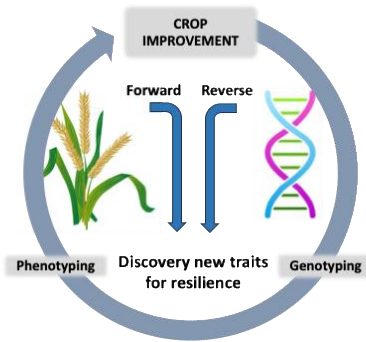
Generate and validate improved genotypes
(BREED)

Focus on a panel of crops, including forest trees, horticultural species, fruit crops, cereals, microorganisms and animals

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Innovative tools to highlight, study and exploit the biodiversity of these genetic resources, which is a key component in determining the sustainability and resilience of production systems



- ❖ Analyze genetic diversity at the genome and pangenome level in the main Italian forest and agricultural species (**WP1.1**)



Characterize

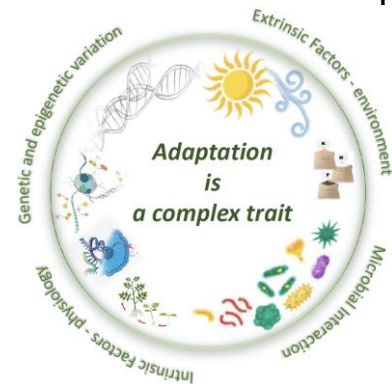
Identification of genetic variants that contribute to resilience and adaptation to climate change

Identification of genes, alleles, metabolites and morpho-physiological traits important for adaptation
Improved tolerance mediated by interactions with microbes

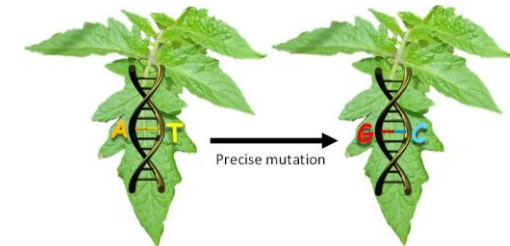


Understand

- ❖ Describe the mechanisms of adaptation to stress situations and identify genes capable of improving the resilience of plants and animals (**WP1.2**)



- ❖ Select and test new varieties and strains with superior resilience characteristics to climate change (**WP1.3**)



Breed

Use and development of cutting-edge technologies and strategies to generate and validate genotypes more resilient

Main results

Improved knowledge
Improved genotypes
Optimized protocols to study biodiversity and stress response, including correlation between phenotype and genotype



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Spoke 1 - Bando a Cascata



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Valorizzazione delle risorse
genetiche per il
miglioramento della
resilienza in **specie erbacee**
importanti per l'agricoltura
italiana

PHENOGEN

Data science per la
caratterizzazione della
diversità e del potenziale
adattativo in specie vegetali

IBEARAD

Approcci integrati per la
valutazione dello stress da
caldo negli **animali da reddito**

COMETA

Valorizzazione delle risorse
genetiche per il
miglioramento della
resilienza dei **sistemi
frutticoli**

VALFRUIT

Chiusura bando: 1 febbraio 2024

Atto concessione Inizio attività : luglio 2024



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le Tecnologie dell'Agricoltura

Agritech

**Plan. Plant.
Planet.**

Thank you