

# R&D in fruit

## Country report - Norway

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**Bioforsk Ullensvang**



# Bioforsk

## Norwegian Institute for Agricultural and Environmental Research

### Vision

Securing food safety and environmental quality, and contributing to value creation based on sustainable resource management.



# Knowledge of soil, plants and the environment is knowledge for life



Bioforsk is a nationally and internationally competitive research institute with cutting-edge expertise in key areas

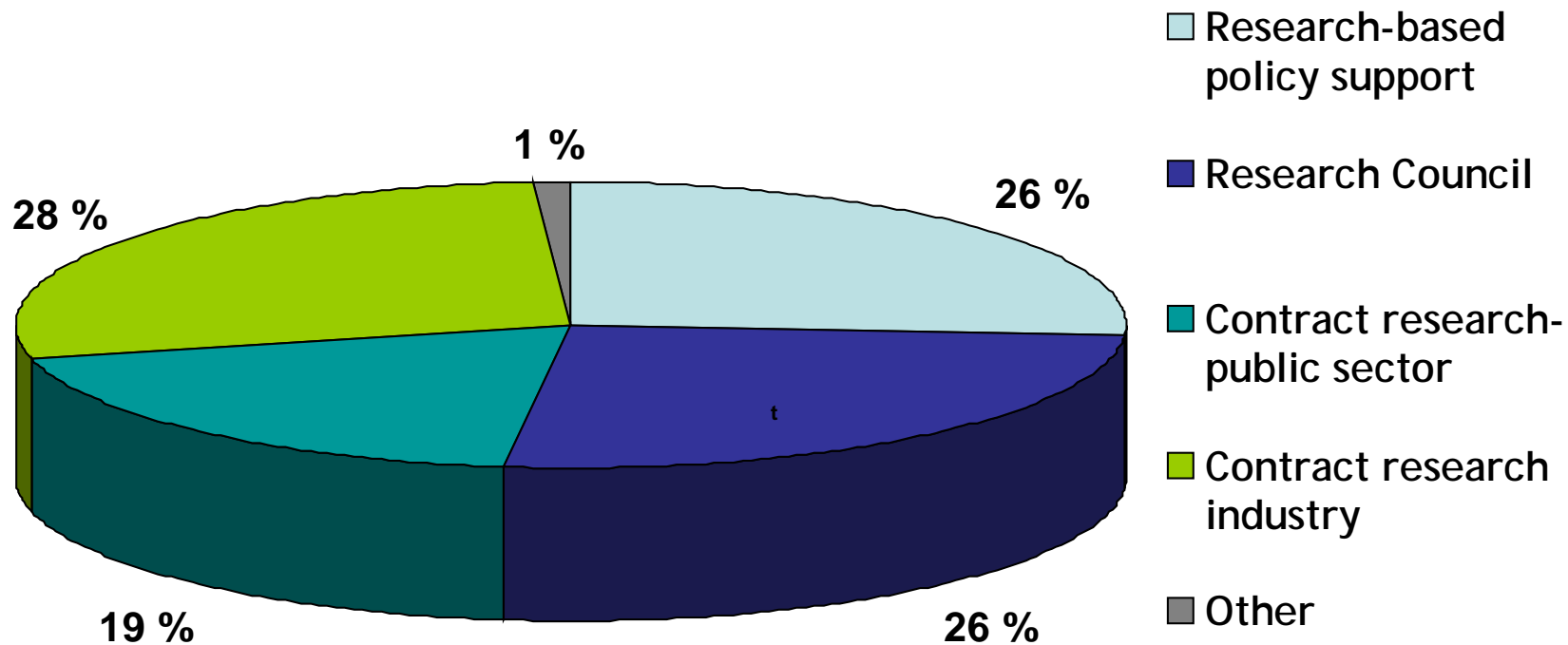
Bioforsk focuses strongly on innovation, added-value creation and business development based on the sustainable utilization of natural resources.

## Organisation

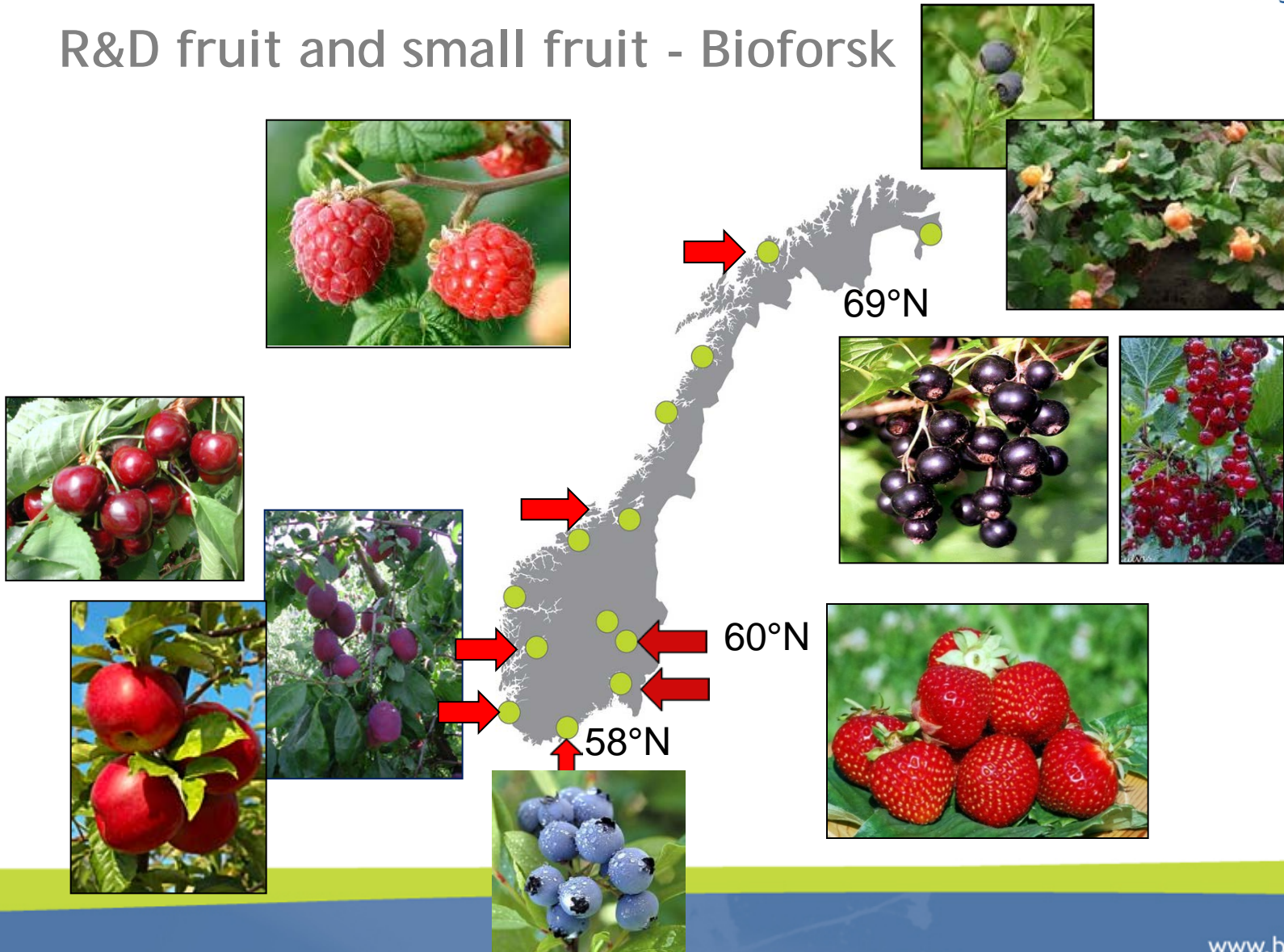
- Government Institute
- Total staff about 460
- Annual turnover about EUR 60 mill (NOK 460 mill)



# Estimated income sources



# R&D fruit and small fruit - Bioforsk



## Some facts about the Norwegian fruit and berry production

- We have a rather cold climate with a short season
- We grow fruits further north than any other
  - Gives limitation in what we can grow
- Norway is a high-cost country
- Norway has rather small farms
- Norway is a long country with long transport distances
- High competition from imported products
- Our government support agricultural production in Norway
- Fruit and vegetables have some protection from import (custom in periods)

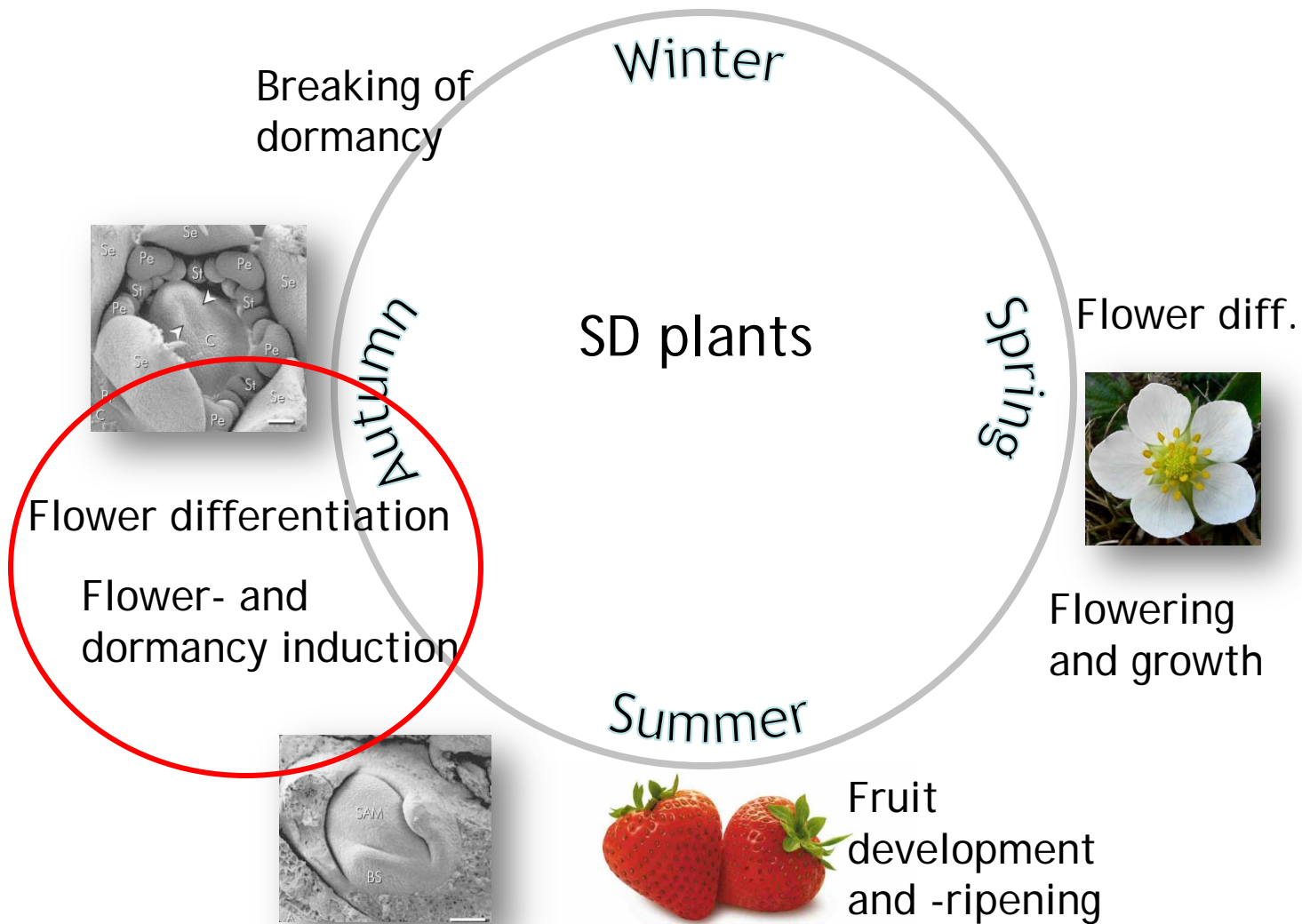
# Main Objective R&D

## Increased production of high quality fruit in Norway



1. Plant physiology: Understand the plants in order to improve the management
2. Variety testing: Testing of new cultivars and rootstocks from Norwegian and foreign breeding programs
3. Integrated and organic production
4. Post harvest physiology: Expand the sales season for Norwegian grown fruit
5. Innovation. Develop more products together with the Norwegian food industry







# Bioforsk Ullensvang



# Human Resources

- 6 scientists (1 professor + 5 PhD)
- 1 adjunct professor (USA), 20 %
- 1 adviser
- 4 technical /admin. Personell
  
- Turnover 2014 - 1.5 mill Euro



# Fruit R&D for Norway

- Pomology
- Post harvest
- Plant health and protection
- Organic fruit production
- Molecular engineering



# Pomology

## Working areas:

- Variety testing in apple, pear, sweet cherry, European plum, apricot and peach
- Rootstock testing in apple, pear, sweet cherry and plum
- PGR and fruit thinning
- Production systems (crop loads, high tunnels, nutrition)



# Large scale - Bioforsk

Planted: May 2010

Planting distance: 1,0x3,5 m

Pollen cultivars: Crab apples



# Post harvest

- Plum, apple, harvest windows, storage and grading
- Fruit quality
  - CA storage
- Apple cider, product development
- Small scale processing



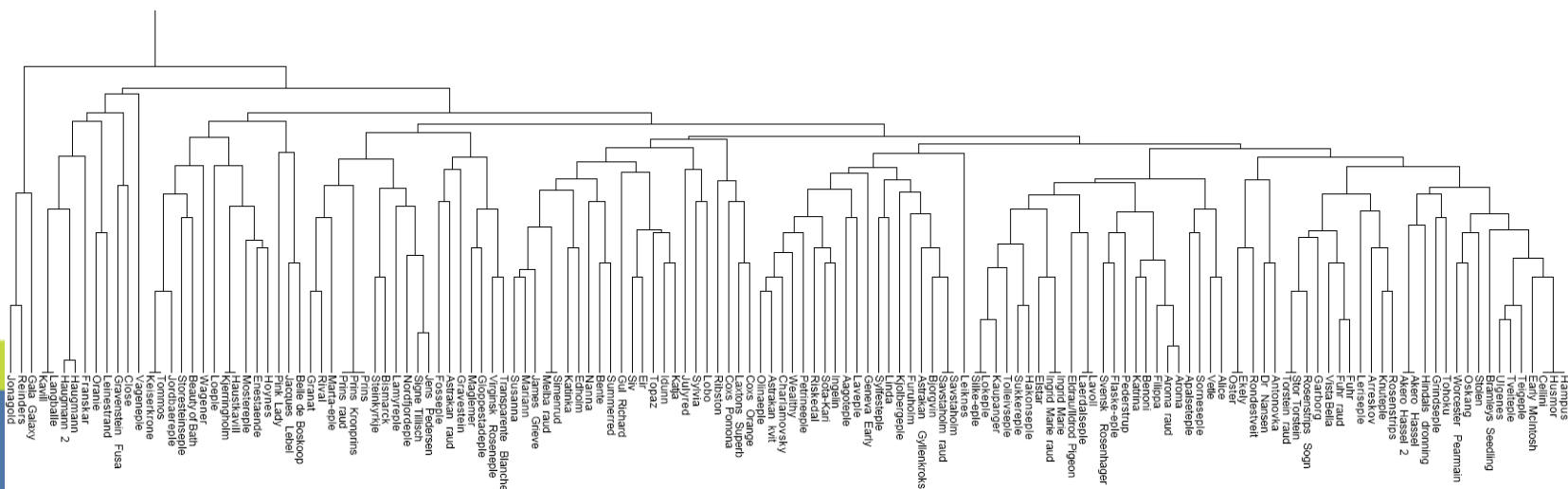
# Organic production

- Management
- Weed controls
- Insects
- Diseases



# Molecular lab

- PCA analysis
- Diagnostics of different pest
- SSR analysis





## New institute July 15, 2015

- Three government institutes will merge next year
- Political decision
  
- **Bioforsk**
- **Norwegian Forest and Landscape Institute**
- **Norwegian Agricultural Economics Research Institute**

# Thank you for your attention



**Bioforsk Ullensvang  
Research Centre**

