

GENERAL DIRECTORATE OF AGRICULTURAL RESEARCH AND POLICIES

RESEARCHERS' ROLE IN AGRICULTURAL EXTENSION

Dr. Muhammet DEMİRTAŞ

Head of Department
Agricultural Economics and Policy Research

21.05.2013



REPUBLIC OF TURKEY
MINISTRY OF FOOD AGRICULTURE
AND LIVESTOCK

CONTENTS

- **Agricultural Extension System (AES) in Turkey**
- **The Role of Ministry of Food Agriculture and Livestock (MFAL) in AES**
- **The AES Scheme of MFAL**
- **The Agricultural Research System in Turkey**
- **The Some Main Agricultural Research Output**
- **The linkages Among Research- Extension- Farmers) in Turkey**
- **Researchers' role in Agriculture Extension**

AGRICULTURAL EXTENSION

- **Agricultural Extension**; Agricultural Extension is composed of activities aim to enhance efficiency of production by using new technologies, increasing income and improving life standards of people living in rural areas.
- **Impacts of agricultural extension** are mainly connected to research, education, policy, planning, credit, marketing, and transfer of innovations relevant to inputs.
- Currently, **prominent feature of science** is to change technology rapidly. In this respect, innovations relevant to agriculture and technology need to be transferred to farmers very quickly.

AGRICULTURAL EXTENSION SYSTEMS

GENERAL APPROACHS OF AGRICULTURAL EXTENSION

- **Problem solving**
- **Transfer of innovation**

IN TERMS OF RESPONSIBLE ORGANISATION

- **Public Extension**
- **Farmer Organization Extension**
- **Private Sector Extension**
- **Cooperative Extension**

IN TERMS OF IMPLEMENTING

- **Traditional Extension System**
- **Traning and Visiting System**
- **Farming System Research Extension**
- **Mixed Extension System**

AGRICULTURAL EXTENSION AS A PUBLIC SERVICE

➤ 1923-1950 PERIOD

➤ 1924 Ministry of Agriculture

➤ 1931 The First Congress of Rural and Agricultural Development

➤ 1950-1985 PERIOD

➤ 1950 Technical Agriculture Organization in 6 Province

➤ 1957 General Directorate of Plant Protection

➤ 1960 General Directorate of Soil and Water

➤ 1971 District Agricultural Engineer, Central KGTZ

➤ 1976 Projects of Rural Development

➤ 1985-2011 DÖNEMİ

➤ 1985 The Ministry of Agriculture and Rural Affairs (MARA)

➤ 1985 I. Project of Agricultural Extension Implementation and Research

➤ 1990 II. Project of Agricultural Extension Implementation and Research

➤ 1991 Project of Widespread Farmer Extension (YAYÇEP)

➤ 1992 Project of Pilot Women Farmers Training

➤ Projects of Rural Development

➤ 2003 Approach of Problem Solving

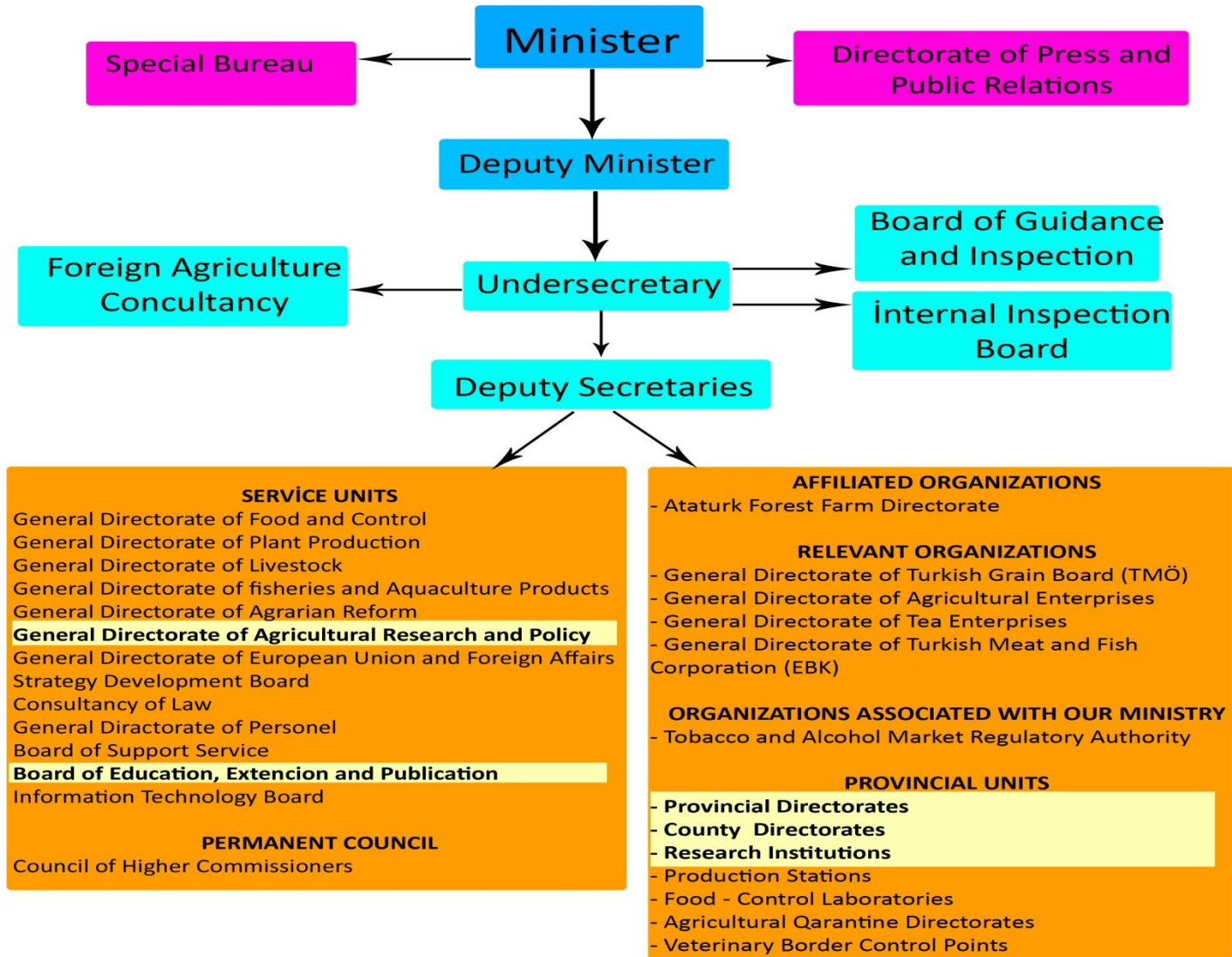
➤ 2004 Agricultural Production Support Project Centered Village

➤ 2004 Knowledge Competition of Women Farmers

APPROACH OF PLURALISTIC AGRICULTURAL EXTENSION AND CONSULTANCY

2006-2012 PERIOD

- **2006 Pluralistic Agricultural Extension and Consultancy System**
- **2007 Development of Agricultural Extension Project (Tar-Gel)**
- **2008 Training Project of Young Farmer**
- **2009 Support to Agricultural Extension and Consultancy Services**
- **2009 Workshops for Woman in Rural Area**
- **2011 Women Farmers are competing-Knowledge and Projects Competitions**
- **2012 Action Plans for strengthening of Women in Rural Area**
- **2012 Support to Socio-Economic training of Rural Women in order to Sustain Rural Development**
- **2012 Dissemination Project of Agricultural Innovation**



DEPARTMENT OF TRAINING, EXTENSION AND PUBLICATIONS

**Department of
Farmer Training and
Extension**

**Department of
Broadcasting
and Periodical**

**Department of In-Service
Training and Coordination**

Provincial Office (81)

Districts Office (957)

Center of Agriculture (10 000)

**Each Provincial Agricultural Directorate;
prepares a Provincial extension programme every year.**

- **Definition of aim,**
- **Definition of problematic districts or regions.**
- **Definition of methods, materials and equipment will be used.**
- **Definition of extensionists and participants**
- **Definition of dates and times for activities.**

➤ Ministry of Food Agriculture and Livestock

General Directorate of Agricultural Research and Policies (47 agricultural research institutes)

Other Authorities contributing to agricultural R&D;

➤ **Ministry of Science, Industry and Technology**

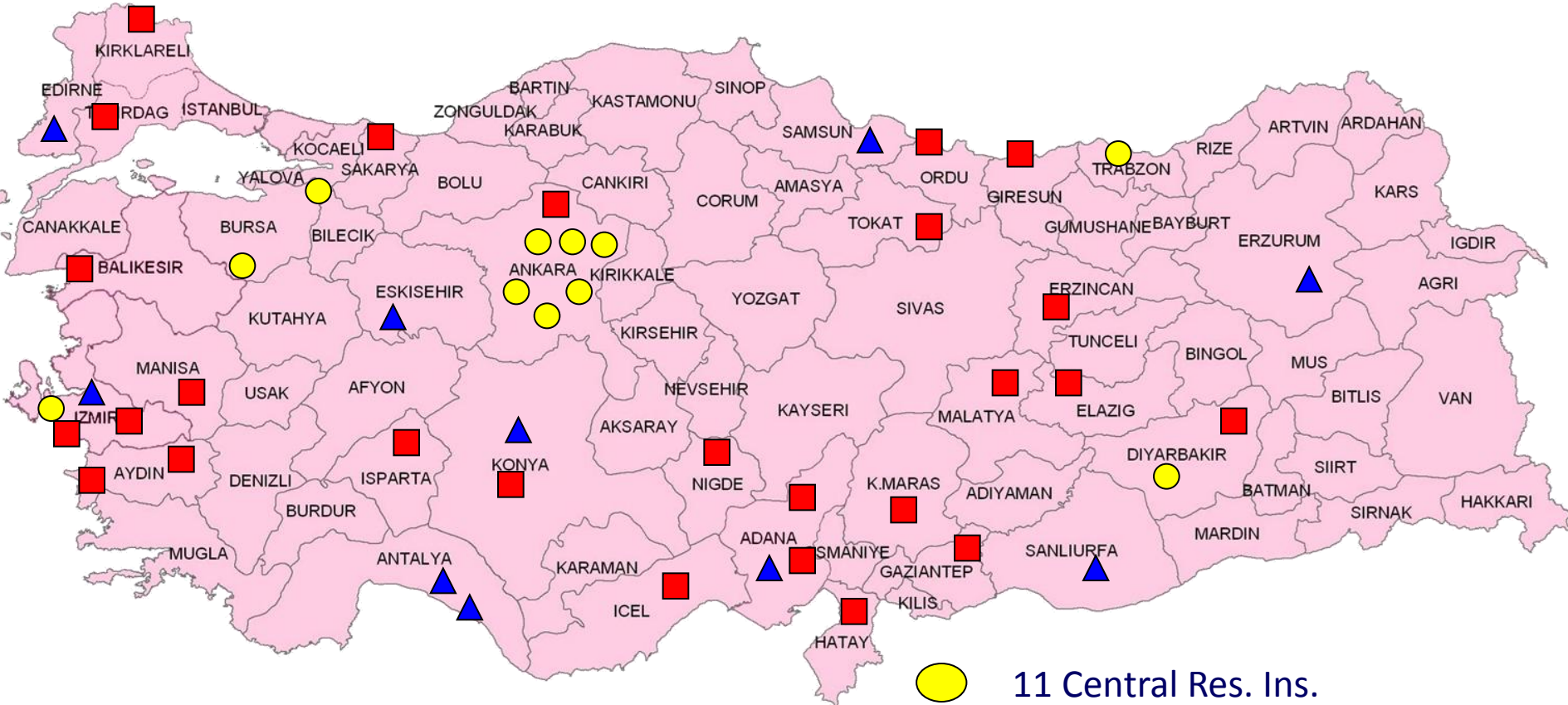
- The Scientific and Technological Research Council of Turkey (TUBITAK)




➤ **Universities Number of Faculties**

- Faculty of Agriculture 30
- Faculty of Veterinary 25
- Department of Food Engineering 38
- Faculty of Fisheries 17

➤ **Private sectors and NGO's**

RESEARCH INSTITUTES



-  11 Central Res. Ins.
-  10 Regional Res. Ins.
-  26 Subject Oriented Res. Stations

Total 47 Res. Ins.

AIMS OF GDAR

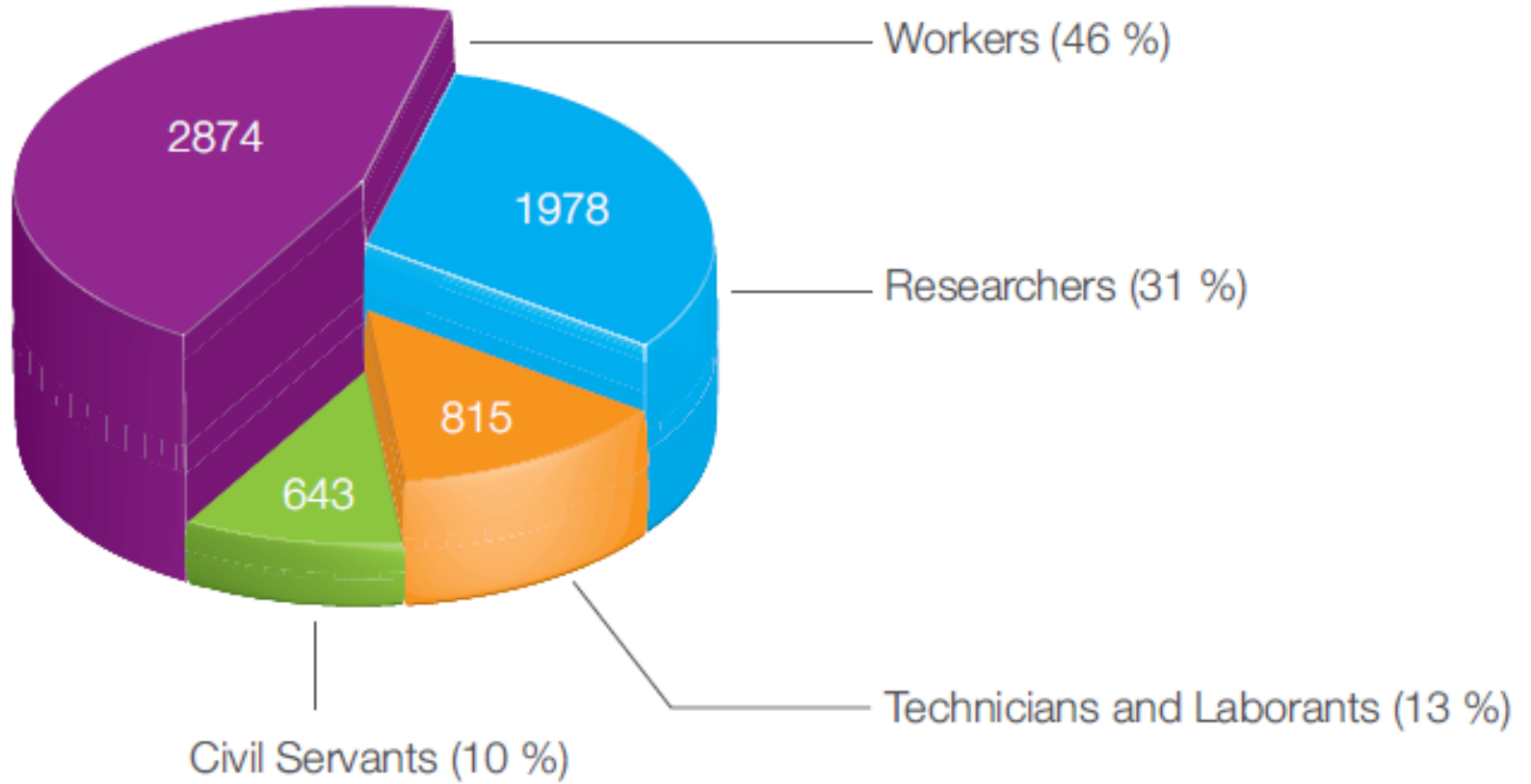
- To increase yield and quality of crops and livestock,
- To develop new crops, varieties, breeding stocks and technologies for domestic and foreign market demands,
- To develop methods and techniques for planted animal health and food safety,
- To conserve and provide sustainable use of natural resources,
- To improve research capacity and the national and international effectiveness of Institutes and their collaboration with stakeholders.
- To prepare the National Agricultural Research Master Plan,
- To determine the research priorities and ensure the use of resources according to the priorities,
- To monitor and evaluate research programs,
- To publish research results and provide the use of developed technologies,
- To prepare reports for policy makers to prevent probable crisis.

RESEARCH AREAS



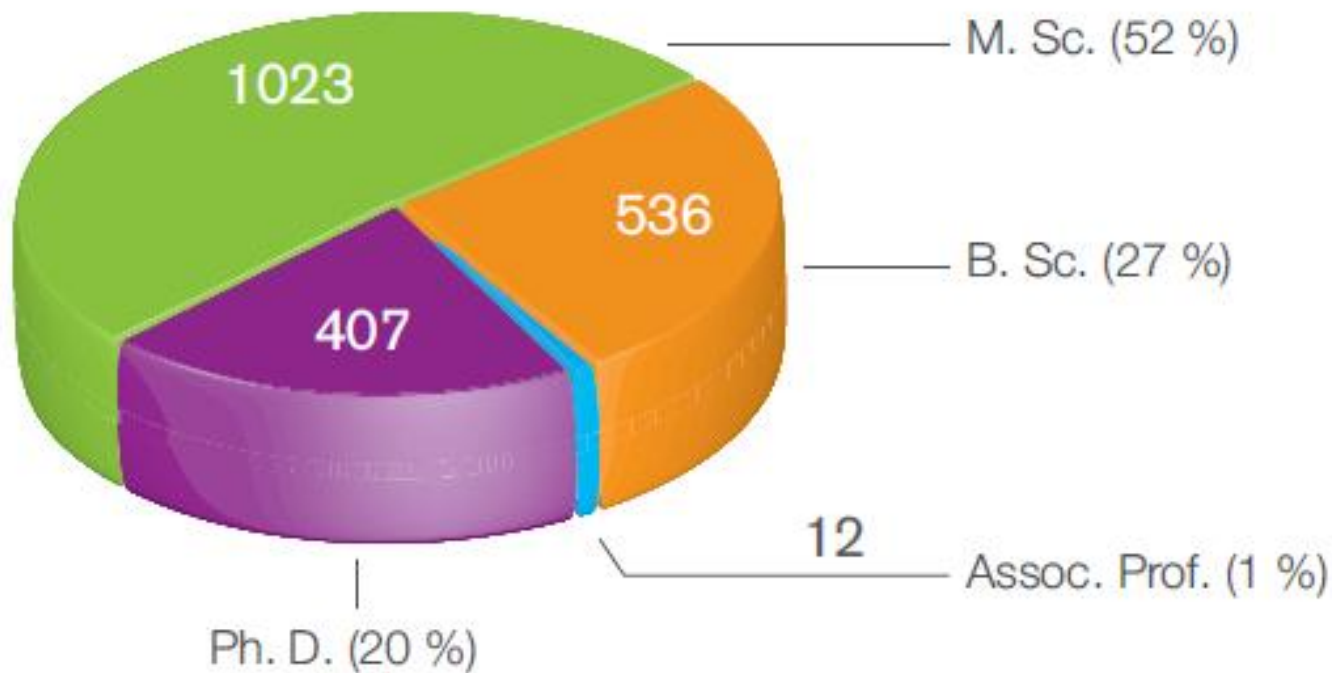
- Plant Breeding and Agronomy
- Plant Health
- Livestock Breeding and Husbandry
- Animal Health
- Aquaculture and Fisheries
- Food and Feed
- Soil and Water Resources and Biodiversity
- Agricultural Economy

STAFF OF GDAR



Total : 6310 Personnel

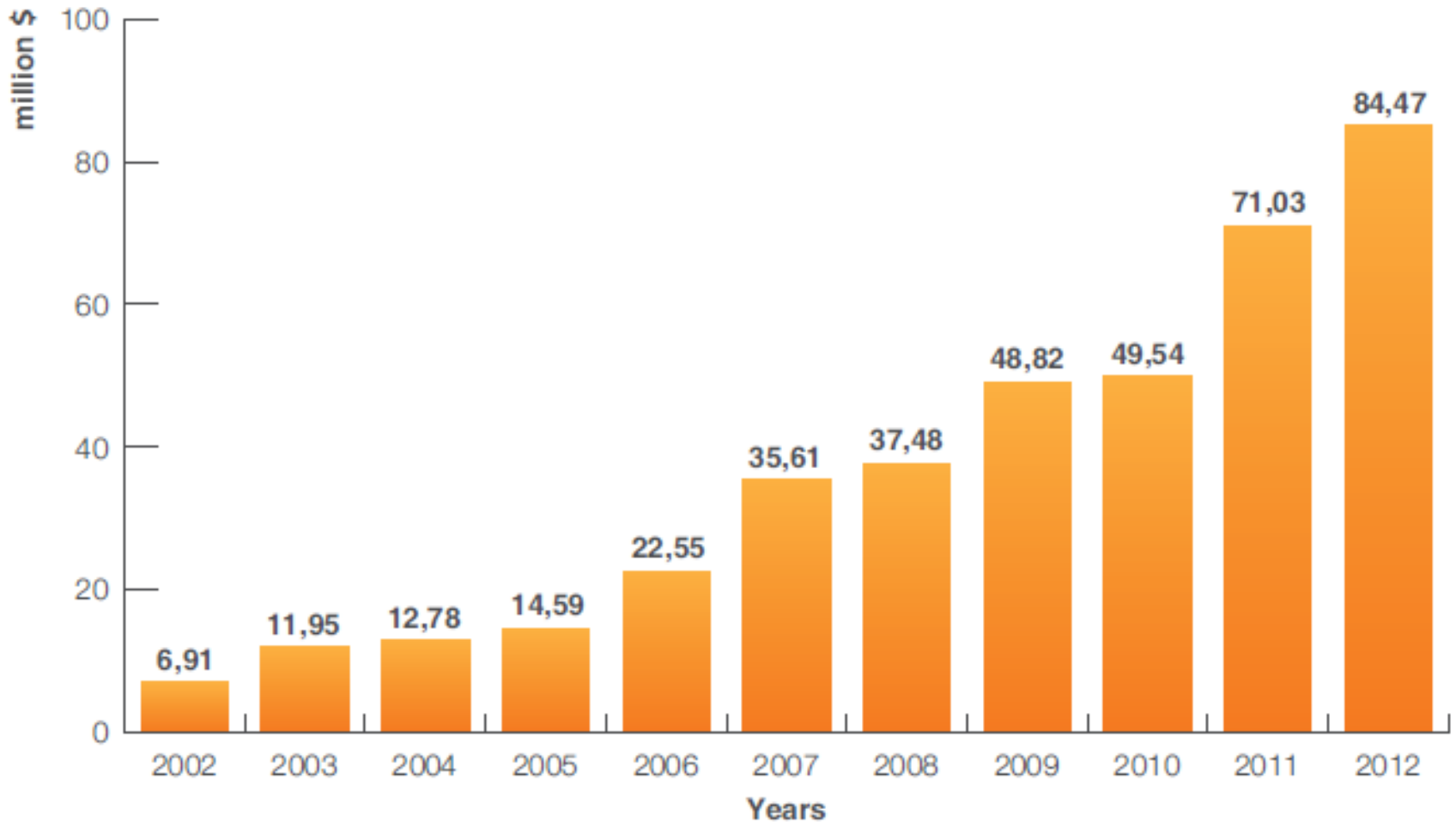
QUALIFICATIONS OF RESEARCHERS



To improve personnel capacity;

- National and international training courses,
- Foreign language courses,
- Contracted personnel employment.

BUDGET OF GDAR



- R&D budget increased 12 times since 2002.
- Personnel expenditures not included.

R&D PROGRAMS

- Investment Budget Program
- **Community Based Animal Breeding Program**
- Animal Genetic Resources Conservation Program
- **Private Sector R&D Support Program**
- Institutes-Private Sector Collaboration Program
- **Institutional Collaboration Programs**
- TUBITAK Programs
- **CGIAR Institutes**
- FAO and Other International Organizations
- **European Union Programs**
- Bilateral Cooperation Programs

SOME MAIN OUTPUTS



Domestic Plant and Animal
Genetic resources conserved,



First domestic potato varieties
developed and submitted
for registration,



The use of domestic F1
hybrid vegetable seeds
reached to 45%,



Dwarf fruits and kiwi
introduced to Turkish
agriculture,



Half of the registered varieties
in field crops developed by our
institutes,



Exporting rice hull seeds
while being an importer in
short time ago.

SOME MAIN OUTPUTS



Seedless lemon developed and submitted for registration,



Production of wheat is increased although the cultivation area significantly decreased,



Hulless barley for diet improved and submitted for registration,



Mobile Solar Irrigation System developed and put forward to patent,



Advanced Research Centres are established,



Private sector participation in R&D studies supported.

SOME MAIN OUTPUTS



Three native enzymes developed as feed supporting additive at the first time and put forward to patent,



Animal vaccines production technologies like foot-and-mouth disease, Brucella, PPR and smallpox vaccine developed,



National food composition determined and widespread-sustainable system formed,



Advanced diagnostic methods provided to be used in our laboratories,



Roll, pack goods and silage machine developed and registered as an useful model,



Biological control and biotechnical methods as an alternative to chemical control developed, such as the bait trap against leaf rollers in cherry.

SOME MAIN OUTPUTS



Three layer hybrid parents developed in poultry,



Precision Agriculture technologies providing input efficiency developed,



The infrastructures of laboratories improved and accredited,

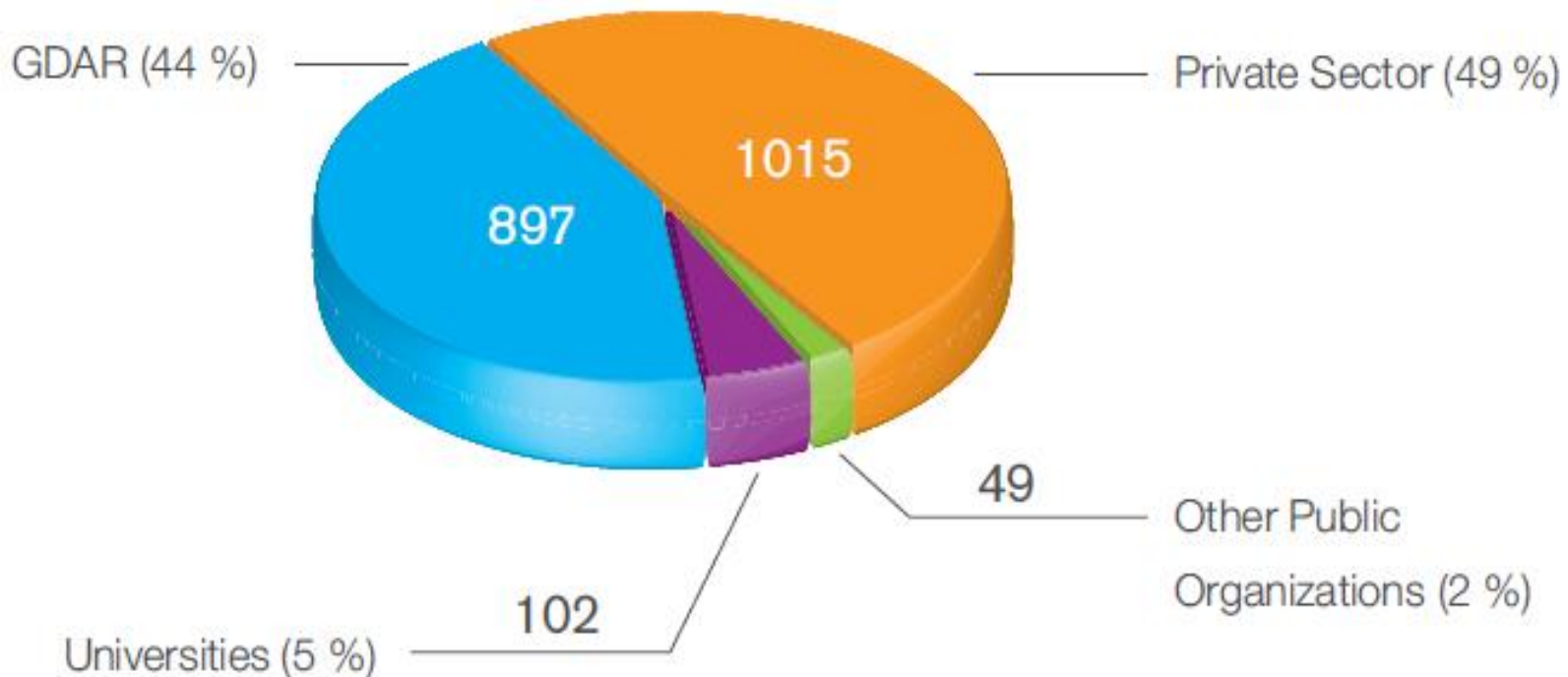


New species domesticated for aquaculture sector,



Air assisted field sprayer developed as an alternative to aerial spraying for control of sunn pest.

REGISTERED VARIETIES OF FIELD CROPS



Total: 2063 Varieties

PROPORTION OF MFAL VARIETIES USED IN PRODUCTION

The field coverage rates of varieties registered by GDAR Research Institutes over crops.

Variety	Rate (%)	Variety	Rate (%)
Bread Wheat	95	Chick-pea	100
Durum Wheat	98	Lentil	100
Barley	99	Cucumber	100
Rice hull	100	Eggplant	55
Trefoil	100	Tomatoes	50
Vetch (<i>Vicia villosa</i>)	100	Pepper	30
Vetch (<i>Vicia narbonensis</i> L.)	100	Hybrid vegetable	45
Safflower	100	Soybean	30
Peanut	100	Sunflower	20
Sesame	100	Clover	20

SHARING OF RESEARCH DATA

Outputs of researches supplied for the needs of relevant institutions including universities for their studies.

Research Topics and Ministries benefited from these outputs

Subjects	Ministries
Erosion	Ministry of Forestry and Water Issues
Biodiversity	
Integrated Watershed Management	
Fisheries	
Climate change	Ministry of Environment and Urban Planning
Environment and land use planning	
Renewable energy resources	Ministry of Energy and Natural Resources
Rural development	Ministry of Development

PERIODICALS

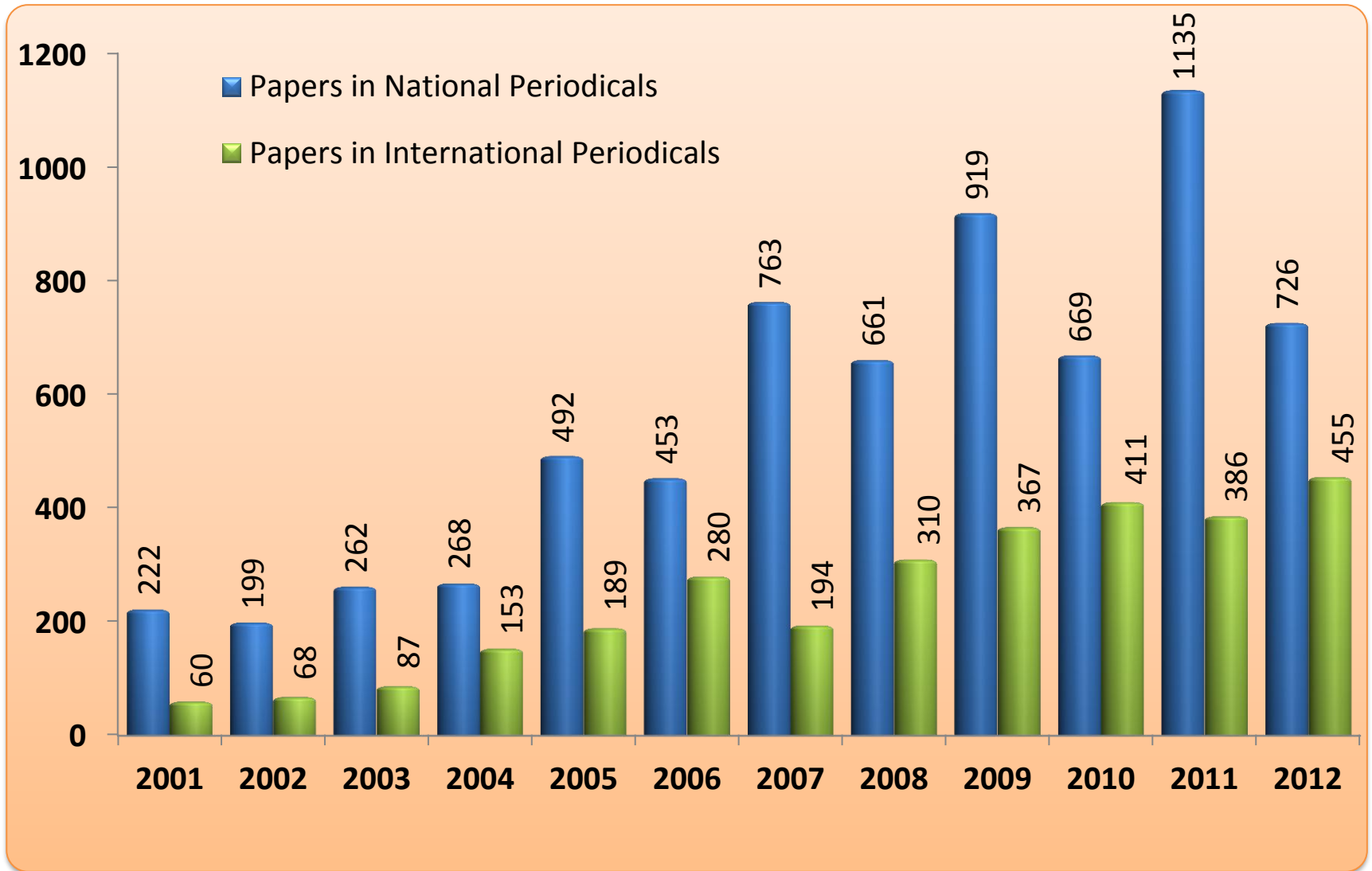
Seventeen peer-reviewed journals are published in the Institutes.

Subject	Number	Subject	Number
Animal Husbandry	5	Plant health	1
Plant production	5	Food and feed	1
Animal health	3	Soil and water	1
Fisheries	1		

Indexed journals by National databases (ULAKBIM- life science)

- Total number of indexed journals 52
- Number of GDAR institutes journals 9

PUBLICATIONS OF INSTITUTES (2001-2011)



➤ To give information on

- New policies of Ministry (changes in legislation, supports of farmer etc.)
- Research results (researcher or lecturer)
- Demands of Marketing (by exporting company specialists)
- New technologies (by company experts)

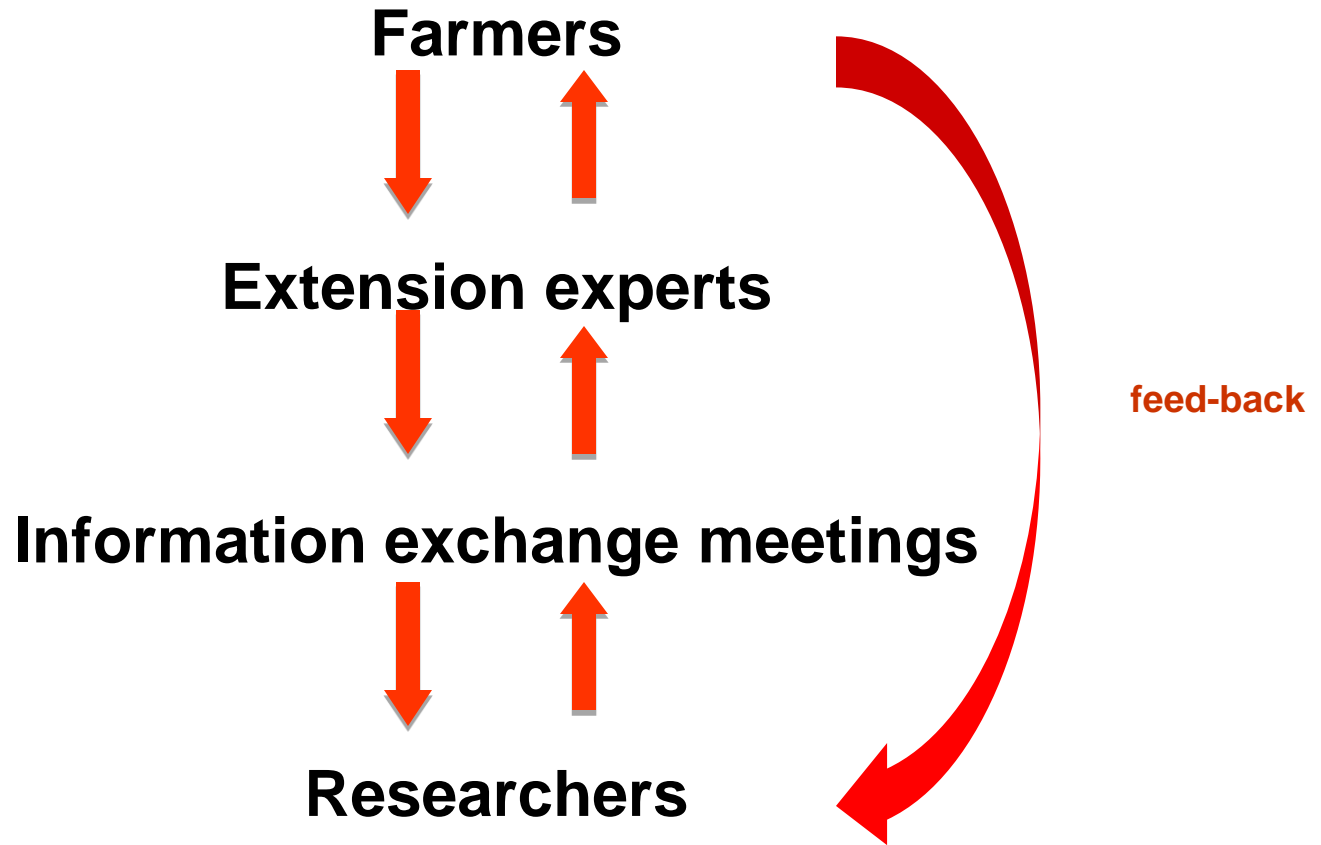
➤ Problems and explanations

- Farmer problems introduced by extension experts
- Applications of Extension program

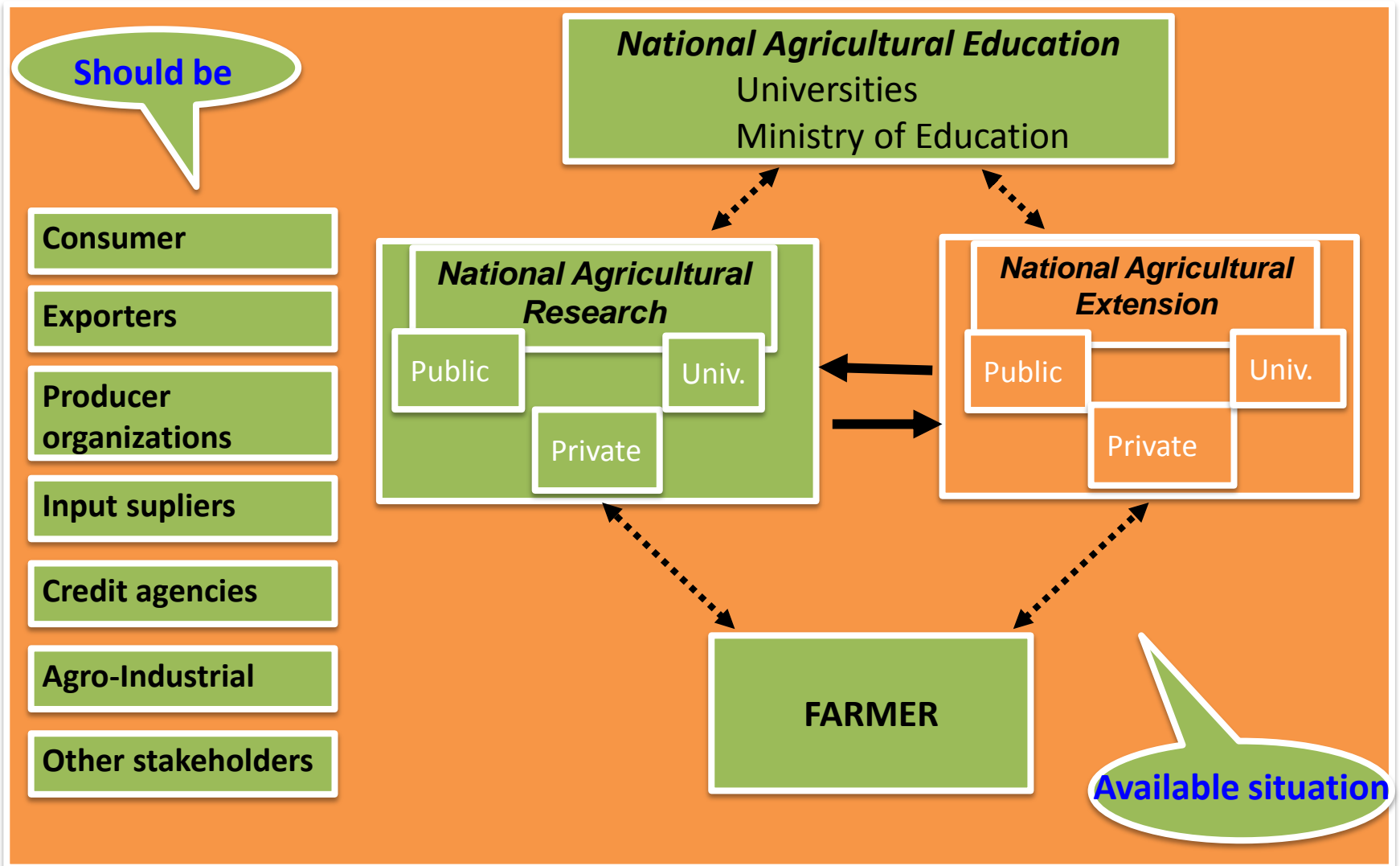
PARTICIPANTS

- **Provincial and Districts Directors**
- **Experts of Extension (from village, province and districts),**
- **Researchers,**
- **Farmer Cooperatives, Unions and Civil Society Organizations,**
- **Representatives of Private sector,**
- **Media and Press**

FLOW OF PROBLEMS AND SOLUTIONS



THE LINKAGES AMONG RESEARCH- EXTENSION-FARMER



ADVANCED RESEARCH CENTERS

- **Turkish Seed Gene Bank**
- **Medicinal and Aromatic Plants Research Centre**
- **Drought Test Centre**
- **Bull Test Centre and Gene Bank**
- **Layer Hen Improvement Centre**
- **Agricultural Energy Research Centre**
- **International Agricultural Research and Training Centre**
- **GAP International Agricultural Research and Training Centre**

UPCOMING ADVANCED RESEARCH CENTRES

- **National Botanical Garden**
- **Plant Tissue Culture Centre**
- **Plant Biotechnology Centre**
- **Farmer Training Centre**
- **Geophytes Garden of Turkey**
- **Biological Control Centre**
- **Cold Hardiness Test Centre**
- **Bred Meat Hen Improvement Centre**
- **Generation Gaining Centre**
- **Bandırma Sheep Biotechnology Centre**
- **Agricultural Fauna and Microflora Research Centre**

In a result of all these mentioned explanations shortly;

To be developed the needs of **Research Institutions and *Researchers-Private sectors stakeholders*** in Agricultural Extension about;

➤ ***New information,***

➤ ***Technology,***

➤ ***Agricultural innovation***

Doing needed activities to make publications and to put into practice these developed information, technology and innovations by using the other communication methods;

➤ **Firstly to hold Regional Exchange Meetings for **to agricultural extensionist,****

➤ **Later, to do necessary works by applied research to transfer to **all stakeholders impressed from the results of this work by extension service.****

The Production Area of Bread Wheat in Rainfed Condition in KONYA Province By Years (%)

Variety Names	2004	2007	2008	2010	2011	2012
Gerek-79	56	48	48	23	7	3
Bezostaja-1	27	35	20	16	4	3
Altay-2000	0	2	6	13	8	7
Bayraktar-2000	0	1	0	13	22	17
Kate-A1	0	3	2	7	7	10
Sönmez-2001	0	0	1	6	11	30
Pehlivan	0	0	1	5	5	5
Ukrayna	0	1	5	5	5	4
Tosunbey	0	0	0	4	15	3
Karahan-99	0	6	7	2	6	3
Ahmetağa	0	0	0	1	1	1
Konya-2002	0	1	4	2	5	10
Dagdas-94	3	1	3	0	0	0
Gun-91	9	0	0	0	0	0
Kırgız	5	3	3	2	2	1
Esperia	0	0	0	0	2	3
Bağcı-2002	0	0	0	0	1	0

Partial Budget Analyses of Wheat Varieties According to the Gerek-79 Wheat Variety in Rainfed Condition in KONYA Province(TL/ha)

Variety Names	Partial Budget Analyse	
	2011	2012
GEREK-79	0	0
SÖNMEZ	350	390
BAYRAKTAR	380	360
KARAHAN-99	270	260
KATE/A-1	-100	230
KONYA-2002	--	460

Thank you...

mdemirtas@tagem.gov.tr

www.tarim.gov.tr

