

CORE Organic Country Report



Country Report on Organic Farming Research in Switzerland

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Photo: Forschungsinstitut für biologischen Landbau

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1 History

Switzerland has a long history of organic farming research, which in its beginnings has been carried out by organic farming pioneers and by private institutions like the Goetheanum, Möschberg Centre and the Research Institute of Organic Agriculture (FiBL). It was in the 1990s, when Swiss Federal Agricultural Research Stations (Agroscope) became also involved in organic research topics. In the following, the milestones of organic research history are listed.

- 1924 First biodynamic research activities at the Goetheanum in Dornach, Switzerland
- 1950s Activities of Hans-Peter Müller, the pioneer of organic-biological farming, at the Möschberg Centre for organic farming
- 1973 Private Research Institute of Organic Agriculture (FiBL) founded
- 1977 First Scientific Conference of the International Federation of Organic Agriculture Movements (IFOAM) held in Sissach
- 1978 Start of the DOK long-term trial¹ at FiBL in cooperation with Swiss Agricultural Research Station Agroscope
- 1984 Start of official experiments of Agroscope FAL on organic farms
- 1985 First financial contribution to FiBL by the Swiss Federal Office of Agriculture (FOAG)
- 1988 First lectures at Swiss Federal Institute of Technology Zurich (ETHZ)
- 1989 Increased funding of FiBL by the Swiss Federal Office of Agriculture (FOAG)
- 1990 First standards for organic milk processing and food packaging in cooperation with Swiss Agricultural Research Stations
- 1994 First four-year mandate to FiBL (the so-called “Leistungsauftrag”) by FOAG
- 1995 Start of Research Coordination Group between Agroscope and FiBL
- 1998 Second four-year mandate to FiBL by FOAG
- 2000 The 13th Scientific Conference of the International Federation of Organic Agriculture Movements (IFOAM) takes place in Basel
- 2000 Agroscope Centres comprising five Federal Agricultural Research Stations become increasingly involved in organic research projects
- 2001 *Peer Review: Evaluation of research and technical development on organic farming in Switzerland* (Prof. Dr. R. Zanolli)
- 2002 Science Paper on soil fertility and organic farming based on the results of the DOK trial published by authors of FiBL and Agroscope
- 2002 Third four-year mandate to FiBL by FOAG
- 2003 Restructuring of organic research coordination group, new mandate
- 2004 First national conference of the research coordination group FiBL Agroscope, now taking place annually

¹ DOK stands for Dynamisch – Organisch – Konventionell; i.e the trial compares biodynamic (D) with organic (O) and conventional (K) variants.

2 Organisation

The **Research Institute of Organic Farming (FiBL)**² is a private trust and has been active in organic farming research and dissemination since 1973.

The **three Federal Research Stations “Agroscope”**³ have become increasingly involved in organic research projects since the year 2000.

- Agroscope Reckenholz Tänikon ART; merger of Agroscope Zürich-Reckenholz (FAL) and Agroscope Tänikon (FAT)
- Agroscope Changins Wädenswil ACW; merger of Agroscope Wädenswil (FAW) and Agroscope Changins (RAC)
- Agroscope Liebefeld-Posieux (ALP).

These Federal Research Stations are doing applied research for a sustainable and multifunctional agriculture and are running numerous research projects specifically dedicated to Organic Food and Farming.

A group, the Organic Research Coordination Group, coordinates FiBL’s and the Federal Research Stations’ activities. In 2004, an annual conference was established, documenting the current status of organic farming research at these institutes⁴.

In addition, there are two private research institutes, which are specialised in biodynamic research activities: the Agricultural Department of the Goetheanum⁵ and the Cereal Breeding Group of Peter Kunz⁶.

2.1 Research Institutions

Public and private research institutions active in organic farming research are listed in table 1. The distribution on research and extension activities on organic farming between Agroscope and FiBL is shown in figure 1.

² Forschungsinstitut für biologischen Landbau / Research Institute of Organic Farming (FiBL), CH-5070 Frick, www.fibl.org

³ Agroscope comprises the Swiss agricultural research stations, <http://www.agroscope.ch/inde.html>

⁴ The proceedings of the 2004 and the 2005 conferences are available at <http://orgprints.org/4845/> and <http://orgprints.org/2493/>

⁵ Sektion für Landwirtschaft am Goetheanum / Section for Agriculture at the Goetheanum, CH-4143 Dornach, <http://www.sektion-landwirtschaft.org>

⁶ Getreidezüchtung Peter Kunz / Cereal Breeding Group of Peter Kunz, CH - 8634 Hombrechtikon, <http://www.peter-kunz.ch/>

Table 1: Overview on public and private research institutions in Switzerland

| Institution | Financing | Contact | Remarks |
|--|--------------------|---|---|
| Research Institute of Organic Farming (FiBL) | Public and private | Dr. Urs Niggli, Director FiBL Thomas Alföldi, Coordinator and FiBL-representative in the Joint Research Coordination Group Agroscopie and FiBL | FiBL is a private trust, active in organic farming research and dissemination since 1973. Overall budget in research and knowledge transfer for organic farming: € 10 Mio. 110 scientific and technical staff. Branch offices in Germany and Austria (FiBL Germany, FiBL Austria) with independent national budgets. www.fibl.org |
| Agroscope ART Reckenholz | Public | Fredi Strasser, Coordinator and representative in the Joint Research Coordination Group Agroscopie and FiBL Padrout Fried, President of the Joint Research Coordination Group between Agroscope and FiBL | Swiss Federal Research Station for Agroecology and Agriculture FAL- Reckenholz has a mandate to cover field crops and grassland systems in Organic Farming. Scientists are located in the different research groups of FAL. 270 scientific and technical staff; annual budget of € 20 Mio A joint Research Coordination Group led by Padruot M. Fried ensures co-ordination between FiBL and Agroscope Centres. www.reckenholz.ch |
| Agroscope ART Tänikon | Public | Dr. Robert Kaufmann, Representative in the Joint Research Co-ordination Group Agroscope - FiBL | Swiss Federal Research Station Tänikon deals with issues of agricultural efficiency and engineering in agriculture. About 90 scientific and technical staff, overall budget of € 9 Mio. www.fat.ch |
| Agroscope ACW Wädenswil | Public | Peter Gut, Representative in the Joint Research Coordination Group Agroscope - FiBL | Swiss Federal Research Station for Horticulture, Research and Extension for integrated and organic fruit- and vegetable production, viticulture, food and beverage technology. 150 scientific and technical staff, overall budget of € 11 Mio. www.faw.ch |
| Agroscope ACW Changins | Public | Dr. Raphael Charles, Representative in the Joint Research Co-ordination Group Agroscope - FiBL | Swiss Federal Research Station Changins (French speaking part of Switzerland) works on all types of research for plant production: field crops and grassland, plant breeding and genetic resources, viticulture, vine and analytic chemistry, berries, medicinal plants, greenhouse crops, regional aspects of horticulture and arboriculture, plant protection, weed science, plant nutrition, biotechnology. www.racchangins.ch |
| Agroscope ALP Liebefeld-Posieux | Public | Dr. Peter Gallmann, Representative in the Joint Research Co-ordination Group Agroscope - FiBL | Swiss Federal Research Station for Animal Production and Dairy Products, research and extension for integrated and organic life stock production, milk production and beekeeping, processing, quality and technology of organic milk products, meat products and bee products, development and production of organic starter cultures for cheese and other fermented food. www.alp.admin.ch |
| Section for Agriculture at the Goetheanum | Private | Nikolai Fuchs | Research on biodynamic agriculture www.sektion-landwirtschaft.org |
| Cereal Breeding Peter Kunz | Private | Peter Kunz | www.peter-kunz.ch |

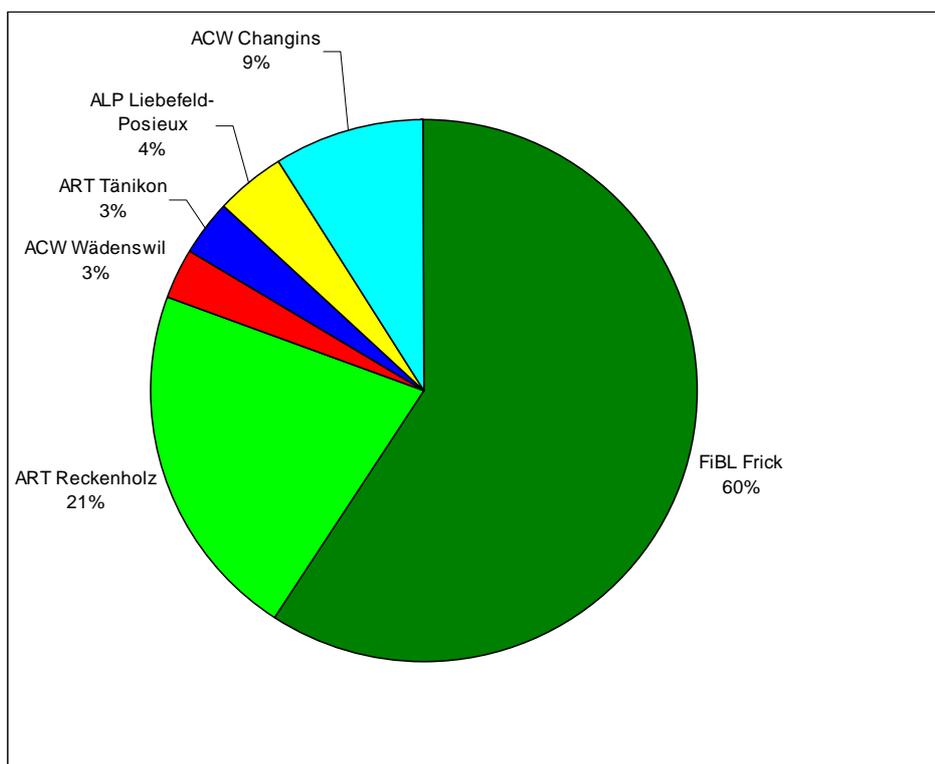


Fig. 1: Distribution of total manpower on research and extension activities by all Swiss Research Stations (Agroscope and FiBL). Total amount of manpower for organic farming is 20,424 working days per year. Data is based on calculations of the Joint Research Coordination Group FiBL-Agroscope for the work programme period 2004-2007.

2.2 Financing organisations

It can be estimated that currently approximately € 7.5 million per annum are allocated very specifically to organic farming research from public budgets. The major part of the state funding for organic farming research is granted by the organisations listed in table 2.

Table 2: Overview of Swiss financing organisations for organic farming research and dissemination

| Financing Organisation | Euro per annum | Remarks |
|---|---|--|
| Federal Office for Agriculture (FOAG) www.blw.admin.ch/ | 7 million € | Via permanent staff of Agroscope Centers and grant to FiBL |
| Swiss Federal Veterinary Office (SFVO) www.bvet.admin.ch | 350'000 € | Grant to FiBL |
| State Secretariat for Education and Research (SER) http://www.sbf.admin.ch/ | 800'000 € (not to be considered as national public funding) | Until recently the funding for Swiss partners in projects of the European Research Framework programmes came directly from Switzerland (SER). Now these monies are distributed via the European Commission in Brussels |
| Cantonal Governments in Agricultural Schools and in Extension Services incl. Swiss College of Agriculture in Zollikofen | 1 million € (estimate) | Teaching and extension in organic farming are general cantonal duties |

3 Mapping research programmes (research topics)

3.1 Which programmes have been carried out and which research programmes are currently being undertaken?

The National Research Programme is organised according to a four-year research concept of the Swiss Federal Office of Agriculture (FOAG). Within this concept, organic farming is considered as an important issue of Swiss agricultural research, and research for organic farming is carried out as a continuous process. The Research Institute of Organic Farming (FiBL) is doing research exclusively for organic farming, whereas at the Federal Agricultural Research Stations research for integrated and organic farming is carried out in parallel. Together with the activities of FiBL, all relevant agricultural topics such as plant production, animal health and husbandry, food quality and socioeconomics are covered and carried out in the context of organic farming. Research is organised as

- a) A mandate of € 3.5 Mio annually to FiBL (the so-called “Leistungsauftrag” by the Swiss Federal Office of Agriculture (FOAG) and the Swiss Federal Veterinary Office (SFVO) and
- b) As a priority setting within the three Federal Agroscope Centres (further details see chapter 6).

3.2 Tentative description of covered subjects

An overview on the distribution of all research and dissemination topics for organic farming covered by the three Agroscope Centres and FiBL is given in figure 2. The categories for the topics are based on the categories proposed by www.orgprints.org. Figure 3 and 4 show the distribution between the Agroscope Centres and FiBL regarding the main topics and subtopics respectively⁷.

- FiBL covers soil management and plant nutrition, horticultural crop research, organic seed production, organic plant protection and biodiversity, livestock health, livestock breeding and ethology, socio-economics including policy, regulation and markets, as well as food quality
- Agroscope ART Reckenholz covers soil management and plant nutrition, grassland and arable crop research, breeding of fodder crops, biodiversity, plant protection and landscape
- Agroscope ACW Changins covers grassland and arable crops research, breeding of arable crops and vine, variety testing, horticultural crops especially aromatic plants
- Agroscope ALP covers milk and meat quality/technology/processing
- Agroscope ACW Wädenswil covers fruit- and vegetable production, viticulture, crop protection, breeding/variety testing, quality and processing research
- Agroscope ART Tänikon covers farm management, farm technology and animal husbandry

⁷ Most of the current research projects carried out by Agroscope and FiBL are described in the Organic Eprints Archive at <http://orgprints.org/view/projects/ch-agroscope.html> and <http://orgprints.org/view/projects/fibl.html>.

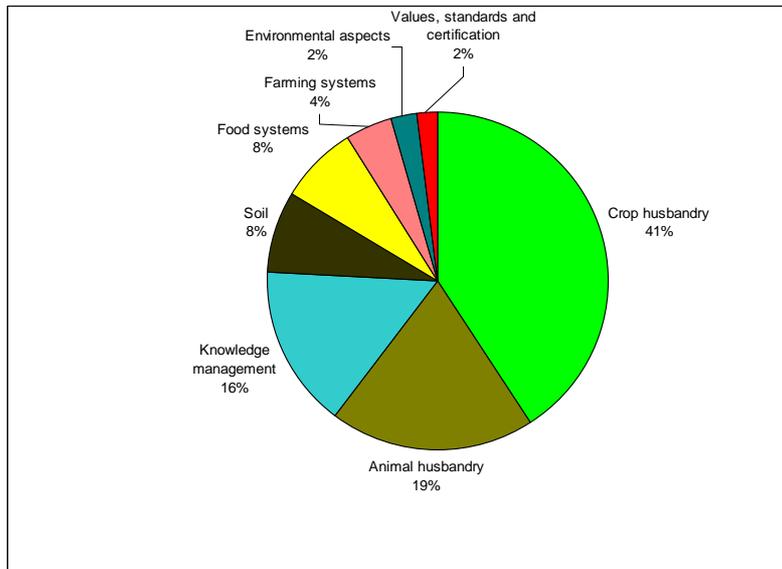


Fig. 2: Distribution of manpower for main research topics covered by all Swiss Research Institutions Agroscope and FiBL. Total amount of manpower for organic farming activities is 20,424 working days per year. Data is based on calculations of the Joint Research Coordination Group FiBL-Agroscope. Categories according to www.orgprints.org.

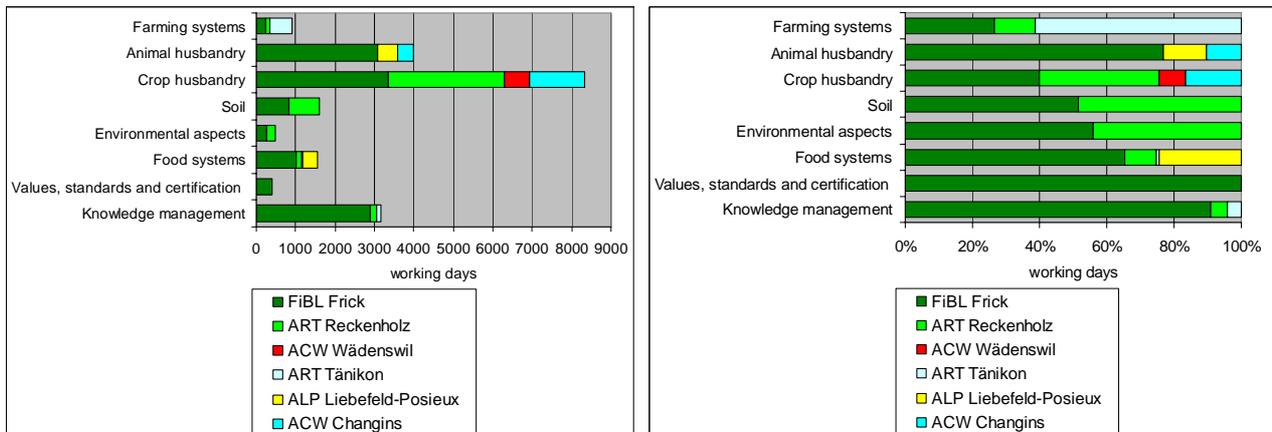


Fig. 3: Working days per year for main topics covered by the Swiss Research Stations Agroscope and FiBL (left) and relative distribution (right). Data is based on calculations of the joint Research Coordination Group; working programme 2004-2007; categories according to www.orgprints.org.

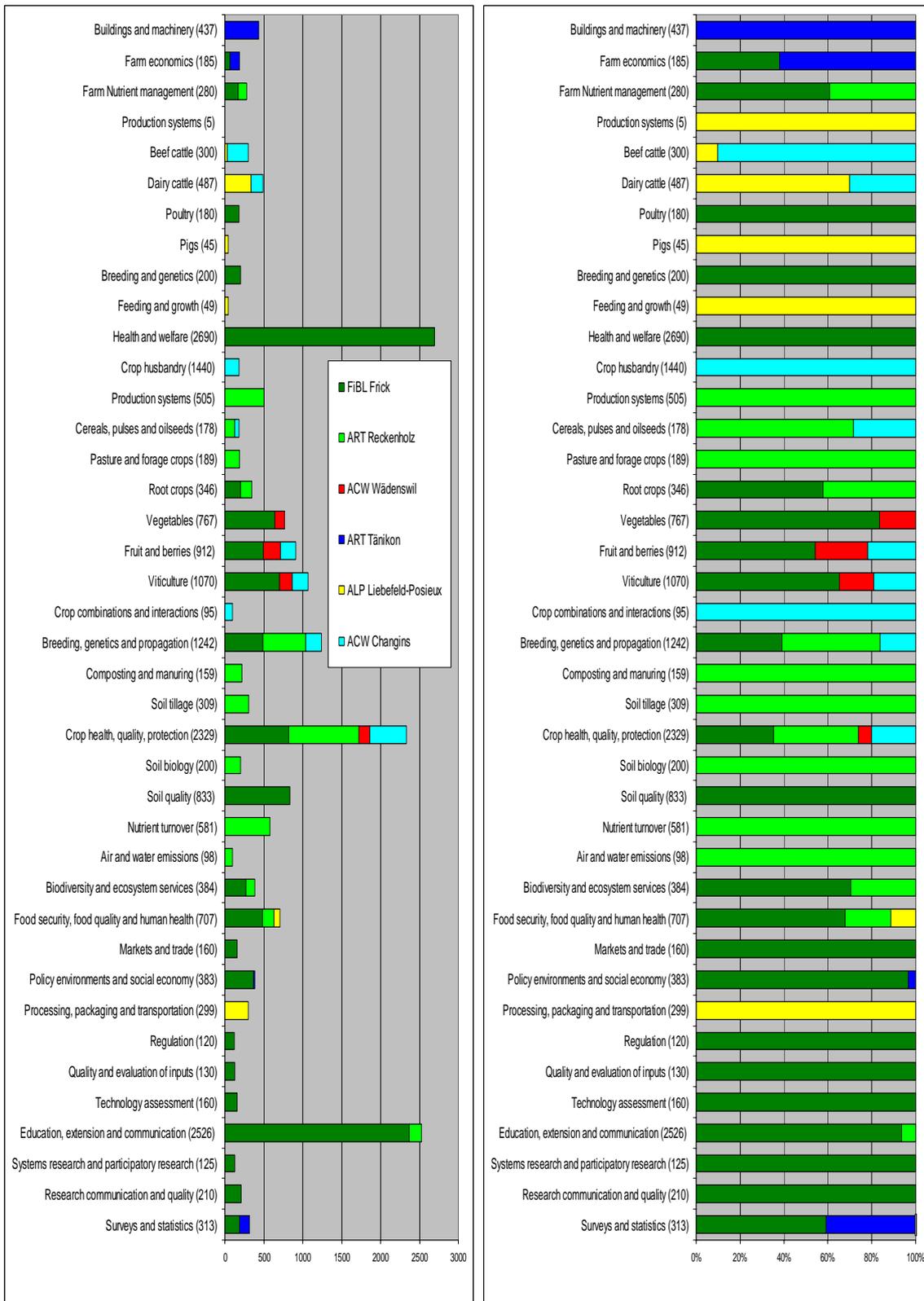


Fig. 4: Working days per year for all main and subtopics covered by the Swiss Research Stations Agroscope and FiBL (left) and relative distribution (right). Data is based on calculations of the joint Research Coordination Group; working programme 2004-2007; categories according to www.orgprints.org.

3.3 Actual spending (€) per subject

An estimate of the actual spending in Euro per year and subject is shown in figure 5. The total amount is approximately € 11 million per year. It can be estimated that approximately € 7.5 million per annum are presently allocated from public budgets. The rest originates from private funding sources (see also chapter 2.2).

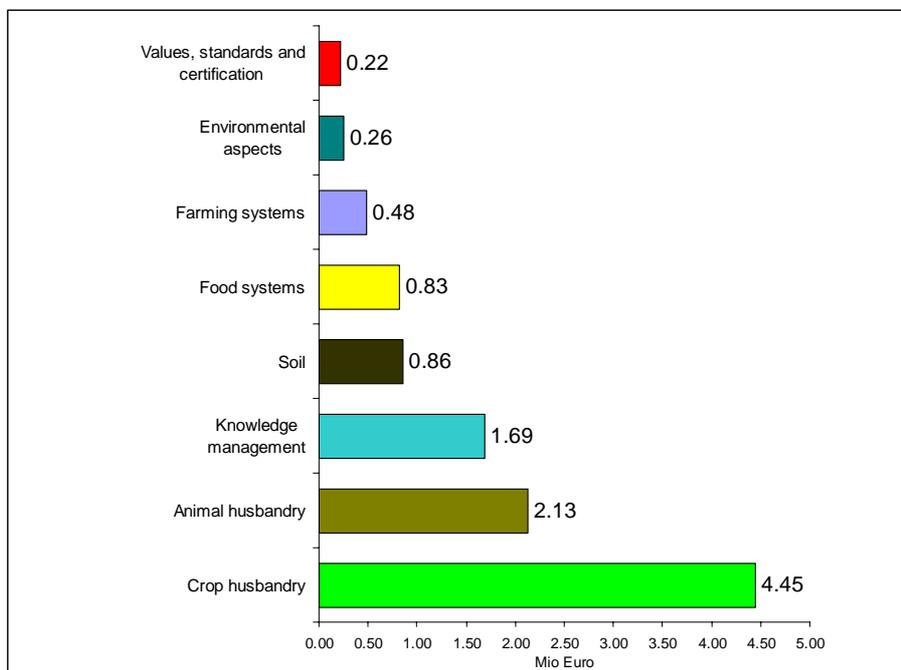


Fig. 5: Estimate of actual spending in million Euro per year for all main topics covered by the Swiss Federal Research Stations Agroscope and FiBL. Calculation is based on working days per year multiplied by 533 Euro per day. Data source: Joint Research Coordination Group; working programme 2004-2007; categories according to www.orgprints.org.

4 Financing

Table 3: Public and private financing based on 533 Euro (800 CHF) per working day

| Institution | Percentage of total research | Total working days per year | Total funding Mio Euro | Public funds Mio Euro | Private funds, Mio Euro |
|----------------|------------------------------|-----------------------------|------------------------|-----------------------|-------------------------|
| FiBL | 60 | 12'000 | 6.4 | 3.0 | 3.4 |
| ART Reckenholz | 21 | 4'200 | 2.2 | 2.2 | |
| ART Tänikon | 3 | 600 | 0.3 | 0.3 | |
| ACW Wädenswil | 3 | 700 | 0.3 | 0.3 | |
| ACW Changins | 9 | 1'800 | 1.0 | 1.0 | |
| ALP | 4 | 800 | 0.4 | 0.4 | |
| Total | 100 | 20'000 | 10.3 | 7.3 | 3.4 |

5 Research facilities

Agroscope Research Stations and FiBL have all facilities required for modern up-to-date research. The relevant facilities are listed for each institution in tables 4-9.

Table 4: Research facilities of Agroscope Zurich-Reckenholz (ART Reckenholz)

| Type | Location | Further details |
|--|--|---|
| Laboratory | ART Reckenholz | State-of-the-art facilities |
| Greenhouses, growth cabinets | ART Reckenholz | State-of-the-art facilities |
| Long-term field experiment DOC-trial (together with FiBL), | Therwil | Long-term replicated field trial (DOK) since 1978 |
| Organic plots for trials on neighbouring organic farms | ART Reckenholz | Six ha arable land of two neighbouring organic farms for experimentation under organic conditions |
| Experimental farm | Alberswil , Agrovision | Monitoring of organic and integrated farming since 1997 |
| On-farm trials | On-farm trials on about 25 organic farms | Variety testing and improvement of performance of organic grassland and arable farming |

Table 5: Research facilities of Agroscope Wädenswil (ACW Wädenswil)

| Type | Location | Further details |
|--|--|---|
| Laboratory facilities | ACW Wädenswil | State-of-the-art laboratory facilities for pathology, entomology, nematology, microbiology, soil, plant and food related research; state-of-the-art facilities for chemical analysis and molecular biological research |
| Facilities for food and beverage processing technology | ACW Wädenswil | State-of-the-art technological facilities for food and beverage processing, microbiological and molecular biological research in beverage processing, experimental distillery |
| Greenhouse and climate chambers | ACW Wädenswil | State-of-the-art greenhouse and climate chamber facilities |
| Storage facilities | ACW Wädenswil, Güttingen | State-of-the-art facilities for storage research (climate chambers, controlled atmosphere) |
| Experimental farm | ACW Wädenswil, Wintersingen, Güttingen | Three experimental farms for fruit-, vegetable production and viticulture, variety trial facilities, certified weather recordings |
| Experimental farm | ACW Wädenswil | Nuclear stock for virus free plant material, insect-free growing facilities |
| On-farm research facilities | Various locations all over Switzerland | Variety trials, crop protection experiments, monitoring experiments, long-term research, full factorial trials |
| Farm network | Various locations all over Switzerland | Farm network for economic research in fruit production |

Table 6: Research facilities of Agroscope Liebfeld-Posieux (ALP)

| Type | Location | Further details |
|----------------------------------|--------------|---|
| Experimental farm | Sorens | 140 ha organic farmland, 75 dairy cows, 100 young cattle and heifers; owner is the Canton of Fribourg; main focus: comparison of different grazing intensities and complementary feeding |
| Experimental farm | Posieux | 67 ha farmland with integrated production (IP), 80 dairy cows (12 fistulated), suckler herd, 80 sows, 240 weaning, growing and finishing pigs; sheep; metabolic cages for cows, sheep and pigs; feed plant; abattoir; automatic feeding systems for the livestock |
| Experimental apiary | ALP Liebfeld | 80 to 120 organically managed experimental hives, main focus on varroa control, as well as European and American Foul Brood |
| Experimental cheese plant | ALP Liebfeld | Production of eight experimental cheeses per day of about 10 kg. Quality control of lactic acid starter. Development of new products |
| Experimental cheese plant | ALP Uetligen | Production of up to five emmental cheeses (80-100 kg) each day. Upscaling of the results from the experimental pilot plant Liebfeld. Quality control of lactic acid starter |
| Starter culture production plant | ALP Liebfeld | Production of 31 organic and 14 non-organic cultures used in different dairy products for starter, additional, surface or ripening purposes. Production of 100,000 units/year exclusively for Swiss Dairies and cheese factories |
| Experimental dairy plant | ALP Liebfeld | Pilot plant for process technologies (heating, filtration, separation, drying) |
| Experimental meat laboratory | Spiez | Education centre for the Swiss meat industry. Pilot plant for meat processing. Cooperation contract for meat research with Agroscope Liebfeld-Posieux |
| Laboratories | ALP Liebfeld | State-of-the-art laboratories for chemical, biochemical, microbiological, physical and sensory analyses of milk, dairy products, bee products and auxiliary substances for the dairy industry and beekeeping; national reference laboratories for milk, milk products and bee products; accredited test laboratories according to ISO 17025 |
| Laboratories | ALP Posieux | State-of-the-art laboratories for chemical, biochemical, microbiological and GMO analyses of feedstuff; chemical, biochemical, microbiological, physical and sensory analyses of meat; biochemical, clinical and physical analyses of blood and muscles; accredited test laboratories according to ISO 17025 |

Table 7: Research facilities of Agroscope Tänikon (ART Tänikon)

| Type | Location | Further details |
|-------------------|--|---|
| Experimental farm | ART Tänikon | Experimental farm for animal-, crop- and greenland-production, 110 ha, 60 cows, 50 sows, for different trials in barn, field and construction |
| Test facilities | ART Tänikon | Test bench for tractors and hay storage blower |
| Support services | ART Tänikon | Workshops for development of measurement systems and constructions |
| Farm network | Various locations all over Switzerland | Farm network for economic research. Database of about 3000 accounts closing; on-farm research according to goals of projects (over 50/year) |

Table 8: Research facilities of Agroscope Changins (ACW Changins)

| Type | Location | Further details |
|---|---|---|
| Laboratory, field experiments, on-farm research | ACW Changins and outer locations | Expertise in field crops and grassland: plant and reproductive growth, agronomic value and quality of varieties, dairy cattle and mountain grazing systems |
| Laboratory, field experiments | ACW Changins and outer locations | Expertise in genetic resources of cultivated plants: biodiversity and genetic resources, disease elimination, healthy plant material propagation, material conservation |
| Laboratory, field experiments, on-farm research | ACW Changins and Pully, outer locations | Expertise in viticulture: plant and reproductive growth, agronomic value and quality of varieties, vine |
| Laboratory, field experiments | ACW Changins and outer locations | Diagnostic of pests, of fungal, bacterial and virus diseases, plant protection |
| Laboratory, field experiments, on-farm research | ACW Changins and Conthey, outer locations | Expertise in berries, medicinal plants, greenhouse crops, regional aspects of horticulture and arboriculture: plant and reproductive growth, agronomic value and quality of varieties |

Table 9: Research facilities of FiBL

| Type | Location | Further details |
|--|---|---|
| Laboratory | FiBL, Frick | State-of-the-art laboratories for plant pathology, entomology and soil, plant and food related research |
| Long-term field experiment DOK ⁸ | Therwil | Long-term replicated field trial comparing farming systems since 1978, on-going (DOK-trial) |
| Long-term field experiment "Präparateversuch" ⁹ | FiBL, Frick | Long-term replicated trial comparing effects of soil management, fertilisation systems and biodynamic preparations since 2001, on-going |
| Long-term field experiment compost fertilisation | Walenstadt und Malans | Long-term trial comparing compost fertilisation on vine grapes; since 1996, on-going |
| Long-term soil monitoring ¹⁰ | Rheinau | Monitoring of soil parameters during the conversion process of integrated to biodynamic farming |
| Experimental farm FiBL Frick | FiBL, Frick | "FiBL-Hof" 30 ha pasture, arable crops, milk cows, pig-breeding, chicken |
| Experimental site Viniculture | FiBL, Frick | Vinicultural research focussing on plant protection strategies, cultivation techniques, variety testing including microvinification |
| On-farm trials arable crops | 22 organic farms | Variety testing of winter wheat, potatoes and corn demonstration trial, since 1999, on-going |
| On-farm trials tree nutrition | Remigen | Full factorial long-term trial on apple tree nutrition concepts, since 2000, on-going |
| On-farm trials fruit | 23 on-farm locations | Precision trials for fruit tree and grape nursery; variety testing for apples, pears, cherries and plums, precision trials and on-farm ring trials; long-term effects of biodynamic vine growing; root stock trial for apple growing; farm net to provide apples for quality research |
| Farm network ¹¹ | 3 regions with each 15-20 organic farms | Farm network for socio-economic research and extension, since 2004 on-going |
| Farm network Pro-Q ¹² | 80 organic dairy farms | Improving udder health of organic dairy cows (Project Pro-Q) |

6 Initiation of research and stakeholder engagement

6.1 How are new research programmes initiated?

Neither the research mandate for FiBL, nor the priority setting of the Agroscope Centres (see chapter 3.1) are organised as an open call process for funding. Research priorities are set for a four-year period within each research station of Agroscope and FiBL according to the existing repartition of research areas. Priority setting and the development of the research project portfolio

⁸ <http://www.orgprints.org/6259>

⁹ <http://www.orgprints.org/6203>

¹⁰ <http://www.orgprints.org/6258>

¹¹ <http://www.orgprints.org/5911>

¹² <http://www.orgprints.org/6281>

is performed in a four-year cycle as an open call process where besides the researchers also farmers, advisory services, as well as consumers can contribute.

For specific extension projects, Agroscope ACW Wädenswil operates an annual open call process involving all stakeholders.

Overall coordination of the projects in organic research is done in the Research Coordination Group Agroscope – FiBL, which meets at regular intervals.

6.2 How are stakeholders engaged in the initiation?

There is no official common platform for stakeholder engagement in the initiation of research of organic topics in Switzerland. However, for prioritisation and initiation of research projects, all research institutions are in continuous contact with the stakeholders on individual levels. The long- and mid-term research portfolios are regularly analysed at each research station by an advisory board, representing aspects of organic production as well. Research programmes include also externally funded projects (EU, COST, etc.).

In order to prioritise the state funded organic research activities at both FiBL and the Federal Research Stations Agroscope, the Joint Coordination Group will intensify stakeholder dialogue from 2006 onwards. The outcome will be used for the next research programme 2008 to 2011.

At Agroscope ACW Wädenswil, stakeholders are actively involved in the open call process for so-called extension projects. Branch specific research forums including representatives from organic production take part in the coordination and priority setting for the extension project portfolio. Through this collaboration ACW Wädenswil extension activities are, although funded by the government, 100% driven by the respective branches (fruit production, vegetable production, viticulture).

For FiBL, stakeholders contact is as follows:

- The Swiss umbrella organisation of organic farmers Bio Suisse is organised branch-wise with committees and working groups (e.g. dairy production, egg and poultry, meat, wheat, fruit, vine, vegetable production, but also questions of labelling, processing, import/export, certification procedure, market development and agro-policy). Scientists and advisors of FiBL are involved as independent experts in these stakeholder panels. These groups discuss continuously research needs and research priorities
- The Board of Directors of Bio Suisse decides annually on the thematic priorities of a research assignment given to FiBL
- FiBL's Board of Trustees, which is responsible for the strategic decisions of the FiBL programme represents the most important stakeholder groups
- Important inputs to research are given by FiBL advisors. They perceive research needs of agricultural practice through their continuous contact with farmers, other advisors colleagues and their work in expert commissions of the organic producers' organisation Bio Suisse
- FiBL's activities are very much user-driven, as more than 50 % of the funding comes from the organic industry

7 Selection criteria and evaluation procedures

As there are no open calls for state funded organic research activities (see chapter 6.1), no official evaluation criteria for the selection process are used. The development of the research project portfolio is primarily based on the overall research strategy of each research station. The potential of high quality projects meeting the strategic objectives are evaluated for its stakeholders benefits and availability of core competence. Extension projects, as at Agroscope ACW Wädenswil, however, are selected by the stakeholders research forums mentioned above. Urgency and relevance of problem solving together with a cost-benefit analysis are the most important selection criteria.

Evaluation is realised by an annually reporting system based on the mandate (Leistungsauftrag) and every second year an activity report is published. In 2001, an external peer review evaluated focus and deliverables of the research projects. Furthermore, individual donors, especially in the case of FiBL, are continuously evaluating the projects.

8 Utilisation of research

an overview on different organisations and institutions offering different forms of dissemination activities in Switzerland is given in table 10. An estimate of the importance is also indicated.

Table 10: Different types of dissemination activities for farmers offered by Swiss Institutions

| | Organisation (abbreviations are explained below) | | | | | | | | |
|---|--|----|-----|----|------|-----|------|----|-------|
| Dissemination type | FiBL | BS | MOs | IB | LBBZ | LBL | SRVA | FA | Other |
| Single farm advice | X | x | | X | X | | | | X |
| Group advice | X | | | | X | | | X | |
| Advice by phone | X | X | | X | X | X | X | X | X |
| Further education courses | X | X | X | | X | X | X | X | X |
| Technical leaflets | X | X | | | | X | X | X | |
| Mailing | | X | X | | | | | X | X |
| Bio aktuell, the magazine for Swiss organic farmers | X | x | | | | | | | |
| Journal articles | X | X | X | X | X | X | X | X | X |
| Internet | X | X | X | X | | | | X | X |

Abbreviations

- FiBL: Research Institute of Organic Agriculture / Forschungsinstitut für biologischen Landbau
- BS Bio Suisse: Umbrella organisation of the Swiss organic organisations; owner of the bud-label
- MOs: Member Organisations of Bio Suisse
- IB: Inspection bodies Bio.Inspecta AG und Bio Test Agro
- LBBZ: Agricultural education and training centres
- LBL: Agricultural Advisory Service in the German speaking part of Switzerland
- SRVA Agricultural Advisory Service in the French speaking part of Switzerland
- FA: Federal Research Stations Agroscope
- Other: Organic marketing associations, private companies and consultancy firms

9 Scientific education & research schools

Table 11: Specific courses on organic farming at university and technical university level

| Institution | Course |
|---|--|
| Swiss Federal Institute of Technology Zurich (ETHZ) | Introduction to organic farming |
| | Case studies organic and integrated farming |
| | Comparing low-input and organic farming systems |
| | Marketing |
| | Vegetable production systems (including aspects of organic production) |
| | Fruit production systems (including aspects of organic production) |
| University of Applied Sciences FH Zollikofen | Introduction to organic farming |
| University of Applied Sciences FH Wädenswil | Various courses (including aspects of organic production) |

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