Italy

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1. Regulatory environment

Organic farming had taken hold in Italy and across Europe, by the1980s, in response to the growing demand for quality products.

During the 1990s, following the profound changes which were eked out in the Common Agricultural Policy (CAP) and the sharper focus on the environmental impact of agricultural activities, organic farming gained increasing acceptance.

Council Regulation (EEC) no. 2092 of June 24, 1991 on "organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs" was approved by the Council of the European Communities and published in the Official Journal (22/07/91).

Over the past few years, increasingly larger land areas have been converted to organic farming. Regulation (EEC) 2092/91, which set a regulatory framework and Regulation (EEC) 2078/92, which provided for the allocation of aid schemes to organic farms, have propelled organic farming in Italy as well.

A further stride ahead was the approval of the regulation on the development of a logo for organic products (Regulation (EEC) 331/2000) and of the regulatory framework on organic livestock farming (Regulation (EEC) 1804/99).

1.1 Inspection and Certification

Any operator who produces, prepares or imports from a third country organically produced agricultural products or foodstuffs shall notify this activity to the competent authority of the Member State in which the activity is carried out and submit his undertaking to the inspection system in force. The Member State shall set up an inspection system operated by one or more designated inspection authorities or approved private bodies.

The Member State shall designate an authority responsible for the supervision of such bodies to ensure compliance with the inspection rules.

Products can be marketed with indications referring to organic production methods, provided that they have been subject to the inspection and certification arrangements.

Annex III of Regulation (EEC) no. 2092/91 lays down detailed rules for implementing the inspection arrangements and sets the requirements operators shall comply with.

When the inspection arrangements are first implemented, the inspection body shall draw up a full description of the unit. In addition, the producer shall notify the body of its schedule of production of crop products, giving a breakdown by parcel.

Documentary accounts must be kept which allow to trace the origin, nature and quantities of all raw materials bought as well as the nature, quantities and consignees of all agricultural products sold.

Where an operator runs several production units in the same area, the land parcels and storage locations for conventional farming shall be clearly separated from those for organic farming. Crops of the same varieties as those produced at the organic unit may not be produced using conventional methods at the same units as the whole farm shall be subject to the inspection arrangements.

Processing and packaging units for organically produced products shall be subject to the same rules on identification, inspection and registration. The keeping of accounts shall enable the inspection body to trace the nature and origin of both raw and processed materials.

Where conventionally produced products are also processed, packaged or stored in the unit concerned, the unit must have separated areas within the premises for the storage of products and operations must be carried out continuously until the complete run has been dealt with, separated by place and time from similar operations performed on products not covered by organic methods. If such operations are not carried out frequently, they must be announced in advance to the inspection body. Every measure must be taken to ensure identification of lots and to avoid mixtures with products not obtained in accordance with the rules on organic production methods.

As far as importers are concerned, the inspection scheme measures are intended to ensure close check of the movements of each lot, through detailed information on the transportation and consignees of the products.

The inspection authority shall ensure that: (i) where an irregularity is found, the indications referring to the organic production method are removed from the entire lot or production run affected by the irregularity concerned and (ii) where a manifest infringement, or an infringement with prolonged effects is found, prohibit the operator concerned from marketing products with indications referring to the organic production method for a period to be agreed with the competent authority of the Member State.

Each Member State is responsible for setting up a national inspection system, therefore, the systems which are currently operating vary widely among the Member States. In the Netherlands, there is one single inspection authority, whereas in Germany the inspection authorities (51) are Länder-based. In the other Member States the number of the inspection bodies is more limited: Belgium (4), Denmark (2), Greece (2), Spain (2), France (4), Ireland (4), Italy (9), Luxemburg (3), Portugal (2), and United Kingdom (7). Hence, with the exception of the Netherlands, the operator is more or less free to choose the inspection authority to which to be subject.

1.2 Inspection authorities in Italy

Like the vast majority of the Member States, Italy has opted for a mixed system whereby inspections are carried out by designated private bodies which, in turn, are supervised by the Ministry of Agriculture and Forestry and the Regional Boards (Annex 1).

Decree no. 220/95 sets a series of obligations which must be fulfilled by the inspection authorities:

- ensure that inspections carried out are objective and involving all the stakeholders;
- operate on an equal footing with no single sector outstripping the others;
- be permanently staffed with personnel entertaining neither professional nor economic relationships with the operators subject to the inspection;
- employ graduate or undergraduate skilful staff;
- be suitably equipped (head office, computer and technical equipment);
- have an organisation based in at least four Regions;
- carry out documented in-house audits and periodical revisions of compliance with the criteria listed in the UNI 45011 European Standard.

1.3 How to qualify for organic farming

Any operator wishing "to go organic" shall register with either an inspection body approved by the Ministry of Agriculture and Forestry or a designated supervised body.

Should the producer intend to convert only part of the holding, he shall indicate the "Production Unit" to be converted to organic farming, which shall be separated from any other units (by hedges, non productive rows etc.). In addition, crops of the same variety as those pro-

duced at the selected unit should not be produced at the other units (i.e. Golden apples).

Having decided whether to convert the whole farm or part of it, the producer shall draw up a report (the forms shall be provided by the certification bodies, the associations or the designated public authorities) containing a full description of the farm, as requested by the Ministry.

The producer shall send the report to the Inspection body and a copy to the Ministry of Agriculture and Forestry. Should changes occur in the farm, the producer shall notify a revised full description of the farm (explants, new planting, channels etc.).

Each year, the producer shall notify its Annual Production Schedule.

After the registration has been notified to the Ministry, the "Conversion period" starts, which lasts three years of consecutive harvesting for agricultural produce. After this period, during which compliance shall be ensured with the EEC Regulation, the farm production can be termed "ORGANIC". Hence, the production of farms in conversion cannot be sold as "organic", but as "transitional organic" and can only be marketed after the first year of organic farming.

Written and documentary accounts shall be taken of the implemented farming practices (treatments, tillage etc.) as well as of the raw materials bought and of the agricultural products sold with copies of the supporting documents (records/invoices). The necessary documents shall be provided by the Inspection Body.

Traceability of the production sold, in conversion or organic, shall be ensured (on a package basis, whenever possible) in order to unequivocally identify both the lot and the producer, through accompanying documents detailing the product quality and characteristics. (Documents and instructions shall be provided by the Inspection body).

1.4 Policies to support and promote organic farming

Regulation (EEC) no. 2078/92 on organic production and conservation of the countryside is an accompanying measure of the CAP reform (July 1992). It stipulates for aid schemes part-financed by the EAGGF (European Agricultural Guidance and Guarantee Fund) Guidance Section to grant annual premia per hectare to farmers who commit to adopting agricultural production methods which have beneficial effects on the environment. In particular, the Regulation promotes the use of agricultural production methods which reduce the polluting effects of agriculture and favour farming systems that are compatible with the protection and enhancement of the environment, the countryside, the soil etc. Similar objectives underlie the production principles of organic farming. Article two provides for assistance to farmers who

commit to significantly reducing the use of fertilisers and/or plant protection products or to maintaining the implemented reduction or introducing or maintaining organic farming methods, provided that these measures prove of environmental merit and have a positive fall-out on the environment and the countryside.

Measures designed to sustain integrated and organic production (reduced chemical inputs) are included and aids are granted, in the vast majority of the Member States, to both newly converted and pre-existing organic farms.

The "organic" measure stems from Regulation 2092/91 which provided fund assistance for training and demonstration projects.

No clearly defined aid scheme is envisioned to support the inspection system, but some countries (Austria, United Kingdom and some German regions) devote additional aids to such activities. Some other countries have also set up market-based and consumer-oriented technical updating and information services (Denmark, Austria and Germany).

Regulation (EEC) 2078/92 is an agri-environmental accompanying measure of the CAP reform, whereby the aid to agricultural income is not only de-coupled from the market action but is also aimed at implementing environmental protection policies.

Under this Regulation, A 1 and A 2 measures are specifically designed to curb the use of plant protection products, whereas A 3 and A 4 measures are focused on the introduction and maintenance of organic farming.

1.5 State of application

A 1 and A 2 measures (on supervised control and integrated production) take the lion's share (40% of the area covered by the Regulation and 56% of the submitted applications).

Organic farming (A 3 + A 4 measures) ranks second (15.9% of the total surface) outpacing any previous forecasts.

The reasons lie in the firm commitment of the public authorities that have helped propel low-impact production methods. A measures account for 79% of the total funds allocated (425 billions were granted in 1996) and the national area under this Regulation accounts for 7% of the Useful Agricultural Area.

The set objective was to attain 12% of the total farmland over the first four years.

A list of the other less specific aid schemes follows.

Regulation (EEC) no. 866/90 was designed to improve agricultural pro-

duce processing and marketing through fund assistance to investments in the agri-food business. Within the framework of the investments and expenditures eligible to EAGGF part-financing (article 11), provisions were introduced on organic farming. Absolute priority was given to investments which boosted new outlet-building. The Regulation (EEC) no. 3669/93, as last amended on December 22, 1993, further reiterated this concept referring to Regulation (EEC) no. 2092/91. Similarly, in the description of the annual selection criteria, the organic farming sector featured high among the general priorities. It is, therefore, self-evident that this Regulation was specifically designed to promote the development of a wide array of activities within the organic farming sector.

Within the framework of the reform of the Structural Funds (Regulation (EEC) no. 2081/93 of 20 July 1993, amending Regulation (EEC) no. 2052/88 on the purposes of Structural Funds), some Community regional programmes provide for the support of agricultural and rural development. These structural programmes are designed for the less prosperous regions (Objective 1) and the rural areas (Objective 5). Regulation (EEC) no. 2085/93, which sets out the provisions for the application of the actions funded by the EAGGF Guidance Section, is designed to support rural development in the aforementioned areas. The envisioned actions include initiatives to reconvert and diversify production and promote investments with a view to enhancing the quality standards of agricultural produce. This action opens up a host of fresh opportunities to organic farming.

The programmes, which have been approved by the Commission based on the proposals submitted by the relevant regions, grant fund assistance to a series of measures, actions and products. Therefore, whole sectors are backed by aid schemes to part-financing of farms and processing and marketing plants and funds to facility strengthening, extension services, training and promotion activities.

Community action also focuses on agronomical research within the framework of Technological Research and Development programmes. The programmes, which are primarily designed for agriculture (AIR research programmes for the period 1990 -1993; the new programme for the period 1994-1998 is being finalised), include priority actions to develop new methods of activities with regard to agricultural quality and diversification. Organic farming fits naturally in those actions which periodically invite scientific institutions and universities to submit projects. The new Community programme for the period 2000-2006 is currently being designed. It includes measures aimed at enhancing and consolidating the development of Organic Farming.

2. Structural aspects

Italy is among the leading European Member States in terms of organically farmed areas and number of organic farms.

Based on data sets provided by the Ministry of Agriculture and Forestry, in 2000 in Italy there are 54 004 organic farms, 49 490 of which are only farms, 1330 are farms/processing units, 2817 are only processing units and 67 are only importers of organic products (table 1).

Table 1. Number of organic operators in the Italian regions in 2000 (Ministry of Agriculture, 2000)

Regions	Farms	Farms processing units	Processing units	Importers	Total
Piemonte	2698	65	224	9	2996
Val D'Aosta	11	2	0	0	13
Liguria	200	29	42	6	277
Lombardia	849	78	286	12	1225
Trentino A.A.	420	27	77	2	526
Veneto	882	95	264	8	1249
Friuli Venezia G.	166	19	41	0	226
Emilia Romagna	4084	81	418	23	4606
Total North	**9310**	**396**	**1352**	**60**	**11118**
Toscana	1242	153	220	4	1619
Marche	1593	48	95	0	1736
Umbria	678	86	72	1	837
Lazio	2096	74	150	0	2320
Total Centre	**5609**	**361**	**537**	**5**	**6512**
Abruzzo	516	42	81	0	639
Molise	447	8	24	0	479
Campania	1606	55	117	1	1779
Puglia	6376	119	263	0	6758
Basilicata	398	16	20	0	434
Calabria	8192	107	85	0	8384
Total South	**17535**	**347**	**590**	**1**	**18473**
Sicilia	9211	114	290	1	9616
Sardegna	8125	112	48	0	8285
Total Insular	**17336**	**226**	**338**	**1**	**17901**
General Total	**49790**	**1330**	**2817**	**67**	**54004**

As far as the geographic distribution of farms is concerned, 67% of them are concentrated in Southern Italy and in the islands, thereby confirming a development of organic farming which is fine-tuned to some given cropping, soil and climatic properties.

The organically cultivated area is 1 040 377 ha, of which 502 078 ha are organically farmed and 538 299 ha are in conversion (table 2).

Table 2. Surface and cropping patterns in 2000 (Ministry of Agriculture, 2000)

Cropping pattern	AA* in conversion (ha)	%	Organic AA (ha)	(%)	Total AA (ha)	(%)
Cereals	92 668	17.2	101 948	20.3	194 616	18.7
Grain Legumes	6797	1.3	6654	1.3	13 451	1.3
Potato	422	0.1	375	0.1	797	0.1
Sugar beet	130	0.0	22	0.0	152	0.0
Industrial crops	17 552	3.3	14 959	3.0	32 511	3.1
Aromatic and medicinal plants and herbs	761	0.1	1163	0.2	1924	0.2
Vegetable crops	7916	1.5	8209	1.6	16 125	1.5
Vegetable crops under green house	353	0.1	387	0.1	740	0.1
Ornamental flowers and plants	2	0.0	4	0.0	6	0.0
Forage	218 829	40.7	183 257	36.5	402 086	38.6
Seed production and propagation material	452	0.1	444	0.1	896	0.1
Fruit crops	17 118	3.2	14 246	2.8	31 364	3.0
Dried fruits	8829	1.6	7470	1.5	16 299	1.6
Citrus	8913	1.7	6471	1.3	15 384	1,5
Olive tree	46 193	8.6	47 670	9.5	93 863	9.0
Vineyard	15 655	2.9	15 594	3.1	31 249	3.0
Grassland and pasture	79 913	14.8	76 913	15.3	156 826	15.1
Other crops	15 796	2.9	16 292	3.2	32 088	3.1
Total	**538 299**	**100.0**	**502 078**	**100.0**	**1 040 377**	**100.0**

*AA refers to the Agricultural Area

Here again, Southern Italy has come to the fore with 71% of the area being concentrated in southern regions and in the islands.

In keeping with the Italian extensive-crop-oriented trends of production, the main organic farming sector is that of cereals and forage crops.

However, there is a scope for market growth for both the fruit sector (3%), the citrus sector (1.5%) and the olive (9%) sector, the main processed products being pasta, olive oil and preserves.

The main information gap in this connection concerns the market as the plethora of producers' associations (annex 2) yields no detailed domestic data.

3. Research and experimentation in organic farming

3.1 Agronomical features

The periodical censuses carried out by the "Centro di Documentazione Agricoltura Sostenibile" (CEDAS) and the Mediterranean Agronomic Institute of Bari (IAMB) on research and experimentation programmes indicate that an increasing number of scientific institutions are focusing on the organic production method.

A comparative analysis of the 1994 census (Agro-environmental Observatory in Cesena) and the 1998 census (CEDAS – IAMB) shows

that the number of organisations and researchers soared from 50 to 100 and from 70 to 500, respectively. In addition, approximately 80 specific research activities on organic farming have involved not only mainstream research groups, but also universities and national and regional research centres.

The Italian scientific institutions are clearly lagging behind in the face of the fast-paced evolution which is sweeping across the international arena and activities are randomly scattered across the country as they are often funded with local resources. Only two programmes, which have been funded over the past few years by the Ministry of Agriculture and Forestry, can be regarded as truly nation-wide.

The northern countries have long massively invested on organic farming research. Over the past decade, more than 400 projects have been masterminded in Norway, Sweden, Finland and Denmark, totalling Euro 40 million. Switzerland invests 3% of the funds allocated by the Federal Office for Agriculture on research in organic farming. Recent surveys estimated that the mean annual expenditure per hectare of organically farmed land amounts to Euro 25 in Denmark, Euro 40 in Switzerland and Euro 55 in Norway.

In the remaining countries, the investments on organic farming research are more modest, though the United Kingdom and France have recently increased their fund assistance share and have laid the groundwork for the development of targeted research activities in the years ahead.

Also the Austrian investments are deemed inadequate, given the growing importance the sector has gained (1.6% of the total expenditure in agricultural research).

In Italy, the funds which have so far been invested in organic farming research activities are absolutely ludicrous in the face of the relentless growth and the mounting technical difficulties presented by the Mediterranean climate and the fruit and legume sector. A projection, based on an estimate consistent with the European mean expenditure (Euro 20 per ha and per year) calculates for Italy an overall investment per year of Euro 19 million.

And this, despite the fact that, as yet, the organic sector has grown in response to rising foreign demand. Hence, given the expected increase in the domestic consumption of organic products, there would be much scope for expansion, up to an estimated 10%.

Generally speaking, on the one hand, innovation needs to be fuelled in the mainstream domestic organic sectors (fruit and legumes and cereals), whereas, on the other hand, it is advisable to implement strategies to boost the weaker sector (i.e. livestock farming) which is

most subject to fierce competition from leading Member States.

Bottom line, despite some strong signals stemming from the Census, the information gap remains in the Mediterranean regions where strategies are modelled on the northern European systems, which differ widely with regard to cropping systems and soil and climatic conditions.

3.2 Main research topics and institutions

3.2.1 Soil fertility management

Organic farming and sustainable agriculture regard the soil as a renewable resource, the fertility of which has to be maintained and enhanced to the benefit of the generations to come.

The organic farming model epitomises the basic criteria which ensure the attainment of this key aim. These criteria, which are cited in the Council Regulation (EEC) no. 2092/9 of 24 June 1991 on organic production methods, highlight the use of green manuring and on-farm organic matter.

Four major research activities call for in-depth probing:

3.2.1.1 Soil conservation

Assessment of the impact of the introduction of organic farming systems on soil fertility and quality.

Identification of integrated technical pathways of fertilisation in organic farming.

3.2.1.2 Crop covers

Green manuring as a sound soil management technique in organic farming.

3.2.1.3 Recycling

Use of farming and agro-industrial residues for fertilisation purposes in organic farming.

3.2.1.4 Composting

Composting combines the need to properly manage “wastes”, which have so far been regarded as an inconvenience and a cost item of productive processes, and the need to return organic matter to severely depleted soils, by reusing the direct or indirect by-products of production processes, thereby closing the natural biological cycles.

Compost can be described as an organic product of composting which can be used in agriculture to restore the equilibrium of the altered organic matter cycle.

Its use is conducive to sustainable agriculture in which a balance is struck between the organic matter which has been withdrawn from and that which has been returned to the biosphere.

Compost is often cited in Annex II of Regulation (EEC) 2092/91 (as last amended) which lists products authorised for use in soil conditioning. The importance to the sector is strategic since so far wasted on-farm organic substances (pruning and horticultural crop residues, straw and farmyard manure) and farm-related substances (oil-mill olive pomace and residual water, marc etc.) can be composted. In addition, a shift is brought about from farm to local enhancement involving all the stakeholders.

3.2.1.5 Technical grade products

• Characterisation and validation of the potential use of seaweed and plant extracts (for inclusion in the list of authorised products).

• Identification and gauging of methods of analysis for biostimulants.

• Identification of new formulations and application procedures to enhance the agronomic efficacy of natural products (bio-fertilisers and natural chelates).

3.2.2 Pest control

Organic farming is regarded by some people as a flat denial of synthetic chemicals and a return to ancient times which does not deserve further scientific investigations. By contrast, the complexity of inter-playing phenomena calls for in-depth probing.

As to pest control, all the agronomical methods which ensure prevention of pest attacks have to be resorted to, such as crop rotations, the choice of resistant or tolerant varieties, hedges, the protection of useful organisms and, only if need be, the products listed in Annex II B of Regulation (EEC) no. 2092/91 are to be applied.

Plant protection products of low environmental impact constitute the only tools authorised for use in pest control under organic farming. Therefore, exhaustive data sets on technical grade products and thorough scientific investigations are required to back decisions on agricultural, agro-environmental, agri-food and agro-industrial policies to be taken on the regional, national and Community level. It is worth recalling that plant protection products authorised for use in organic farming are rather scanty and poorly effective and that, for some of them (i.e. copper salts), restrictions to the use are about to be imposed and this is a major stumbling block to the growth of organic production. Hence, an overall strategy needs to be devised in order to promote the reorientation of environmentally-friendly agricultural policies.

One of the objectives to be pursued is therefore to assess the efficacy of the currently applied pest control methods, develop the best dosages and identify the most suitable timing of treatments and the possible side effects of products.

More importantly, agro-system design actions have to be urged in order to boost the system "self-control", thereby limiting and/or nullifying the use of off-farm inputs. Of utmost importance to the Mediterranean region is then the identification of valuable alternatives to the use of copper.

3.2.3 Quality of organically-farmed products

The argument for the increased safety of organic products versus conventional ones, resulting from the prohibited use of synthetic chemicals, is often challenged by the claim that, in the absence of external protection from pest attacks, plants in general and horticultural crops in particular trigger self-protecting mechanisms and produce molecules in concentrations which are more hazardous to people's health than plant protection products. In addition, in the case of plants, the absence of external protection systems magnifies the risk that biological contaminants will produce substances (i.e. aflatoxines) which are extremely hazardous to man.

More interestingly, little is known about the impact organic production methods have on nutritional and organoleptic properties as opposed to conventional methods. In this respect, it is fair to say that a comparison is often difficult to assess, because, beside the techniques in use, some other factors come into play, such as the variety, the maturity stage, the soil and climatic conditions, the sun radiation and the harvesting and post-harvest techniques. All the aforementioned factors are likely to induce changes in the chemical composition and nutritional and organoleptic quality.

Hence, there is a pressing need for additional and focused research programmes. Two approaches may prove helpful to assess and establish the quality of organic products:

- an agronomical approach designed to assess the extent to which specific agronomic practices which do without synthetic chemicals may impact on the chemical composition of organic products when compared to conventional practices;
- an approach keyed to the food-man relationship to assess the extent to which the total or partial consumption of organic products instead of mainstream products may affect the type and composition of the diet and the nutrient uptake.

3.2.4 Organic Stockfarming

Regulation (EEC) no. 1804/99 on organic livestock products has been adopted since August 24, 2000. However, most of the rules contained in it do not stem from technical and scientific investigations, which are lamentably rare in this field, but draw heavily from various European scenarios. Hence, the practicability of the proposed method remains highly questionable.

For an unbiased judgement to be expressed, insights need to be gained into some of the key issues which have taken and will take centre stage throughout the application stage.

The rules on livestock feeding feature high among the priority fields of investigation. The prohibited use of some feedstuffs and additives calls for the identification and experimentation of alternative products which meet the animal nutritional requirements. It is generally accepted that feeding is one of the major determinants which is likely to affect the quality of livestock products, therefore, it is absolutely necessary to investigate the possible repercussions on milk and meat properties. However, the quality of organic products depends on a vast array of factors and focusing on the specific quality of organic livestock products is no easy task, as confirmed by the scanty bibliography available.

The physical and chemical properties of these products might be investigated for a start, based on the current production discriminating factors. The results would yield a few clues as to the best fitted system to produce meat which is more likely to be accepted by the consumers not only because of its compliance with the organic status, but also because of objective parameters and properties.

The development of analytical inspection and identification methods of organic stockfarming products may form the basis for further activities.

One of the issues which deserves marked attention is animal health, which plays a pivotal role in the regulation, ranging from prevention measures (the selection of appropriate breeds, livestock housing, rearing density, access to pasturage, animal welfare) to the use of homeopathic and phytotherapeutic medicinal products and the restricted use of chemically-synthesised allopathic medicinal products. This issue is all the more topical in so far as the consumer expects to buy organic livestock products which, like plant products, have not been treated with synthetic chemicals.

No less important is animal slurry form organic livestock farms, as some animals are kept on pasturage and this boils down to a whole

host of problems. Given the slimness of data on the Mediterranean regions, guidelines on waste management should be knowingly advocated.

3.2.5 Assessment and design of the organic production method in farm holdings

The pattern of development which is still prevailing is modelled on intensive, specialised and highly productive farming which capitalises on cutting-edge technologies.

The impact of this production method on the environment and the conservation of natural resources have long been seriously underrated or shamefully neglected while food self-sufficiency and economic profitability were in the spotlight.

During the second half of the last century, the agricultural research activities and policies, which supported this model of development, have brought about radical changes in the agro-ecosystems. The food webs involved have been excessively simplified in order to attain the maximum yield per unit and off-farm inputs, especially plant protection products, fertilisers and energy, have been increasingly used with alarmingly devastating consequences on the environmental resources.

Over the past few years, the European scenario has substantially changed. Food self-sufficiency has been outpaced by surplus management and the demand for healthy and quality products has soared along with the awareness of the limited natural resources available. This has prompted the design of new production models, hinged on the sustainable development of rural areas, within which farming has been assigned a prominent role.

Against this new background, efforts are being leveraged to try out and transfer methods and models, which are best fitted for low-or-null environmental impact agriculture, envision a more rational use of natural resources and champion the use of low off-farm inputs and the enhancement of self-regulating mechanisms in the system.

Hence, methods based on measurable and comparable criteria need to be devised in order to thoroughly explore the farm dynamics and the various factors which interplay in the agro-ecosystem. Such an approach is indispensable to assess Mediterranean tailor-made organic production methods and gauge the innovations stemming from the experimental activities on the farm level.

Research should, therefore, focus on:

- the design of a method to analyse and assess organic farming systems and system/process innovations, based on measurable criteria;

• the multi-criteria assessment of the organic farming systems.

The technical capabilities are not lacking in Italy. A number of farms currently either produce most of the products admitted for use in organic farming or import them from foreign farms. Unfortunately, no data are available on the type and quality of the products in use, though a noticeable drop has been reported in the use of inputs in agriculture. From 1998 onward, the market for plant protection products has steadily shrunk as a result of a string of factors, such as the attempt at cutting intermediate production costs, the use of low-dose products, the market trends and the climatic conditions. Fungicides and insecticides have recorded the sharpest drop. The total consumption which equalled 160 thousand tons in 1996 dropped to 110 thousand tons in 1998.

As to the plant propagating material, which is available in Italy, though not enough to meet the demand, the share traded remains low and hard to quantify, given the derogation period ratified by the European regulation.

3.2.6 Some of the most active Research Institutes

- Istituto Sperimentale per la Zootecnia – Rome
- Istituto Sperimentale per la Nutrizione delle Piante – Rome
- Istituto di Patologia Vegetale – Rome
- Istituto di Ricerca per gli Alimenti e la Nutrizione – Rome
- Istituto Agronomico Mediterraneo – Valenzano (Bari)
- Centro di Sperimentazione Agraria e Forestale -Laimburg
- GRAB-IT Gruppo di Ricerca in Agricoltura Biologica – at Ancona University
- Dipartimento di Agronomia – Florence University

4. Training and awareness-building in Organic Farming

One of the major stumbling blocks to the development of Organic Farming in Italy is the poor training, information and know-how transfer activity. The latter relies heavily on conventional strategies (publications and conferences). Farm assistance services, demonstration, training and reskilling programmes are lamentably lacking. In addition, the vast majority of promotional devices, though multimedia-based, are not sufficiently updated to catch up on the evolution of technical and scientific findings.

Networking is a priority for organic farming researchers and scientists with a view to:

- forging links between the demand for research and decision-makers;
- circulating information and expertise, thereby initiating synergies and reducing redundant overlapping;
- fostering constant updating with respect to regulations, technicalities and methods;
- improving the spreading of the results of the activities.

In order to ease the transfer of scientific knowledge and information, within the framework of the inter-regional programme on organic farming, the Ministry of Agriculture and Forestry has funded a project to set up a national information system on organic farming (BIOITALIA). The project, which has been implemented by IAMB, was designed to:

- set up a national and a series of regional Web sites on organic farming;
- promote information exchanges between the Ministry of Agriculture and Forestry, the Regional Boards and the Inspection bodies (institutional Intranet);
- foster the spreading of scientific knowledge and exchanges between the stakeholders involved;
- set up a national documentation centre;
- back up the Regional Boards in handling the data sets relating to the application of Regulation (EEC) 2092/91.

Within the framework of this inter-regional programme, ISMEA (Istituto per gli Studi, Ricerche e Informazione sul Mercato Agricolo) was funded a promotion and communication project on organic farming and the Agency for Agricultural Development of Tuscany was sponsored a training course on the surveillance of inspection bodies. A host of local activities have been launched within the region. Noteworthy is BIOPUGLIA information system (www.biopuglia.iamb.it). However, despite the strides made, organic farming has still a long way to go.

5. Market issues of organic farming

5.1 Type of local market organisation

The marketing of products obtained from organic farming has always presented specific problems. In the past organic farmers used only direct selling channels; afterwards the first specialised shops were opened and a rapid increase in sales has then been experienced through specialised retailing (specialised and herbalist's shops). Direct selling, herbalist's shops and specialised shops are still the main channels of sale by retail.

These types of sale show nowadays structural limits and hence restrain the growth potentials of the sector.

Starting from the late nineties, to satisfy the constraints imposed by the market evolution, a renewal process in sale types has started. Such a renewal process implies the enlargement of premises, the training and re-organisation of the staff, the introduction of informatics as a support to management, and the adoption - also in the field of organic products - of the marketing tools currently used for all agri-food products. In particular, the enlargement of the average selling area is essential for reducing the incidence of fixed costs on the turnover of the business. The experience shows that the limitation of commercial costs is the first step to get the reduction of selling prices, that is historically one of the critical points of district shop supply.

In 2000, in Italy there were 1038 points of sale by retail (table 3), including specialised shops of organic products, herbalist's shops, natural food shops, macrobiotic and dietetic shops[1].

Table 3. Specialised shops in Italy (Biobank, 2000)

Regions	1999		2000	
	no.	%	no.	%
Piemonte	138	15.0	125	12.0
Val D'Aosta	5	0.5	7	0.7
Liguria	30	3.3	40	3.9
Lombardia	148	16.1	178	17.1
Trentino A.A.	46	5.0	52	5.0
Veneto	114	12.4	132	12,7
Friuli Venezia G.	38	4.1	48	4.6
Emilia Romagna	88	9.6	108	10.4
Total North	607	66.1	690	66.5
Toscana	73	8.0	96	9.2
Marche	40	4.4	34	3.3
Umbria	13	1.4	11	1.1
Lazio	80	8.7	88	8.5
Total Centre	206	22.4	229	22.1
Abruzzo	3	0.3	6	0.6
Molise	3	0.3	3	0.3
Campania	26	2.8	33	3.2
Puglia	23	2.5	34	3.3
Basilicata	4	0.4	2	0.2
Calabria	11	1.2	6	0.6
Total South	70	7.6	84	8.1
Sicilia	26	2.8	26	2.5
Sardegna	9	1.0	9	0.9
Total Insular	35	3.8	35	3.4
General Total	**918**	**100.0**	**1038**	**100.0**

[1] Tutto BIO 2001 - Edizioni Distilleria. The list mentions only the shops in which 50% of the turnover is resulting from the selling of food products.

The alternative to traditional retailing is the Modern Distribution, where till few years ago, the organic product had not its own space and in some cases it was devalued by a random arrangement.

At present organic productions are the core of a reasoned policy of single signboard differentiation. In 1998, in Italy there were 357 supermarkets with a selection of organic products, mostly fruits and vegetables. At the end of 2000 their number exceeded 1400 units (table 4).

Table 4. Number of supermarkets with organic fruits and vegetables (Biobank, 2000)

Regions	1996	1997	1998	1999	2000
Piemonte	0	0	12	31	
Val D'Aosta	0	0	0	0	
Liguria	0	0	0	6	
Lombardia	10	29	94	219	
Trentino A.A.	1	1	1	1	
Veneto	53	55	63	81	
Friuli Venezia G.	0	1	1	5	
Emilia Romagna	66	103	125	148	
Total North	**130**	**189**	**296**	**491**	**1005**
Toscana	73	17	96	43	
Marche	40	9	34	33	
Umbria	13	3	11	5	
Lazio	80	18	88	32	
Total Centre	**206**	**47**	**229**	**113**	**315**
Abruzzo	3	1	6	8	
Molise	3	1	3	2	
Campania	26	6	33	2	
Puglia	23	5	34	4	
Basilicata	4	1	2	0	
Calabria	11	2	6	0	
Total South	**70**	**16**	**84**	**16**	**67**
Sicilia	26	6	26	0	
Sardegna	9	2	9	4	
Total Insular	**35**	**8**	**35**	**4**	**52**

5.2 Type of product and quantity

An important parameter in assessing the economic weight of organic farming is the production pattern; it deeply affects the economic and commercial evaluations of the producing farms and their level of profit.

Based on the data provided by the Italian inspection bodies, at the end of 1999 (figure 1), 38% of the Agricultural Area, both organic and under conversion, was grown with forage crops. The 15% of the production patterns is devoted to forage-pasture crops. The largest area of forage and forage-pasture areas is found in Sardinia. These data explain

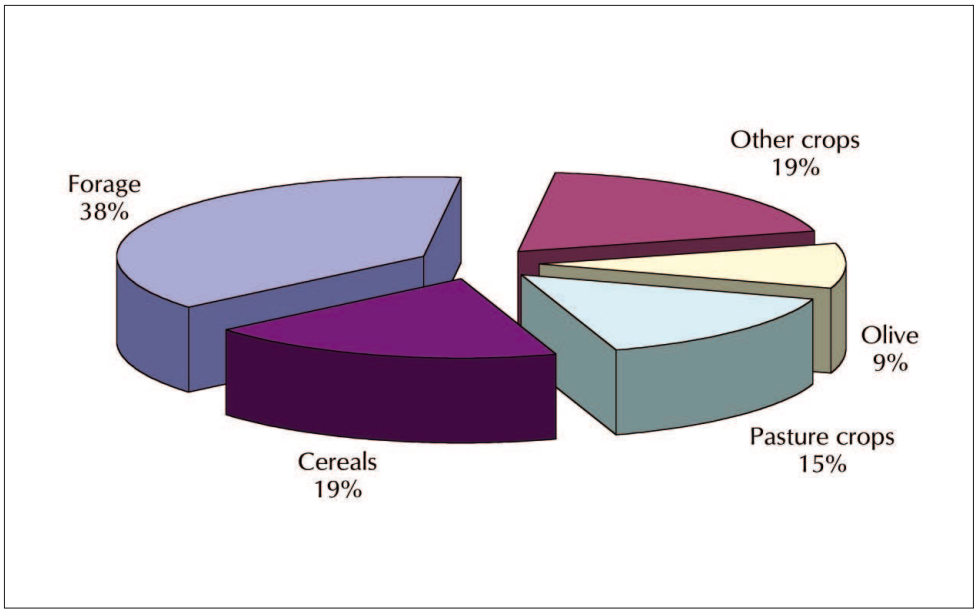

Fig. 1. Cropping Patterns in 2000 (Ministry of Agriculture, 2000)

the strong characterisation of organic farming for extensive crops.

Cereal crops account for 19% of the national area, and rank second, with a cropped area - in 2000 - of over 194 600 hectares, of which more than 40 thousand hectares in Sicily, 31 thousand in Sardinia and 29 thousand in Apulia. These three regions account for half of the national organic cereal production. The third crop is olive that accounts for 9% of the Agricultural Area, followed by the other cropping patterns.

5.3 Main market outlets and types of product

The success that organic farming is starting to experience is the result of a deep transformation of the food awareness of the Italians who - during the nineties - turned to the organic products as a reaction to the fear triggered by the Chernobyl accident, by the atrazine contained in water and by the frequent alerts of newspapers on the progress of chemistry in foodstuffs.

At the dawn of the new millennium we are definitely out of the pioneer stage of organic products, characterised by some aspects of pauperism and healthiness, and we are going to enter the age of marketing and of the communication of the product value to the consumer: an austere image is not interpreted any longer as a guarantee of healthiness and safety of cultural techniques.

The changes in the approach to food fruition have induced some modifications also in the structure of preferences and in the willingness to

purchase, increasing the number of people who consider the consumption of organic products as the best way to effect a healthy diet.

In Italy, the modes of supply and the low level of investments in the communication have not favoured the approaching of new potential consumers, so that organic product purchases are mostly concentrated in Northern Italy, whereas the level of consumption is still low in the rest of the country.

A market research, carried out at the end of 1998 within the Biopuglia project on the consumption of organic products in Apulia, has enabled to outline the model of Apulian consumers purchase behaviour, providing useful indications to those who should take strategic market decisions or to those who want to have additional information about the Apulians' customs towards this category of products.

Beyond some products mostly consumed by adults (wine, dried fruits) or by youth (honey, fruit preserve) all types of organic products are consumed by the whole Apulian family.

The preference for fresh, or at least poorly elaborate, products, typical of the Mediterranean diet, is observed in the commodities mostly purchased by the Apulian consumers: cereals and their derivatives, fresh fruits and vegetables, honey, milk and dairy products, fruit preserves, olive oil, tomato sauce and wine.

The Apulian consumers of organic products purchase frequently but in small quantities.

The place of purchase mostly used by Apulian consumers is certainly the specialised shop, where one can buy, in very high percentages, all types of products, especially the dried and processed ones.

Fresh fruits and vegetables are available in specialised shops or directly at the producer and only marginally in supermarkets. Besides fruits and vegetables, oil and wine are mostly purchased directly at producers' farms.

Lastly, it is noteworthy that a substantial portion of the national organic production is not marketed on the domestic market, but it finds an outlet in foreign markets. Unluckily, no statistical monitoring system is now available to quantify the fluxes of product that are consumed outside the national boundaries, and the destinations.

5.4 Data on the domestic consumption

Estimating the consumption of organic products in Italy is not very easy due to the high fragmentation of production structures, the strong presence of direct and informal channels andthe uneasy definition of market boundaries.

In Italy, the same as in most European countries, organic products are confronted with a competitive universe that includes also other products; it may be defined universe of the natural. It comprises natural products[2], dietetic products[3] and the products obtained from integrated cultivation.

Considering only the organic products marketed as such, and easily identifiable by the consumer, the estimated market size is between US$ 1000 and 1050 million. The volume of business of the organic sector has grown, over the last few years, at a mean rate of 9% and presently accounts for 0.9% of the total food consumption of the Italians. Some estimates indicate, for the first years of the twenty-first century, a 2.5-3% incidence of the organic sector on the total food market. A considerable share ranging between 30 and 40% comes from foreign countries.

5.5 Forms of organic product promotion

The promotion of organic products is usually undertaken so as to develop the knowledge and the consumption of a product or to contribute to the strengthening of products already consumed.

Promotion is often associated with "enhancement", including several actions aimed at increasing the value of products and at subsequently increasing the market price.

The forms of promotion and enhancement are a major tool to stimulate the demand for organic products. Among the forms of promotion and enhancement including the participation in fairs and national and international events of the sector, the adoption and promotion of trademark policies, the promotion of the organic sector is also effected today through the association of the organic message and of its products to other aspects of public interest that are particularly successful towards consumers, citizens and their institutions. The organic sector is actually promoted also through actions and projects in the fields of environmental and food education, holidays on the farm, rural tourism and social solidarity, all action areas with which the organic sector seems to create easy and natural synergies.

Following the provisions in force, all the Italian organic products are marked by at least two trade-marks: the EU trade-mark, represented by

[2] The natural products are meant as the products processed following production methods that do not make use of food additives, preserving agents, dyes thus keeping or even increasing their nutritional value. For example whole-meal and whole-meal bread are natural products as compared to white flour.

[3] In general dietetic foods are those directed to increasing or decreasing the supply of specific substances that should be uptaken in given doses.

the wording ORGANIC FARMING – EEC INSPECTION REGIME, supported by the private trade-mark of one of the nine certifying and inspection bodies recognised in our country.

On the same product, the single producer can also apply his own business trade-mark, to distinguish it from other similar products and exploit the renown and trust of the consumer, acquired through advertising campaigns and successful promotional actions.

Although still emerging for the moment, the introduction of organic products in collective catering services could be, in the long run, an important commercial outlet for the sector. It is, at the same time, an equally powerful promotional incentive.

Moreover, rural tourism has attracted an increasing number of visitors over the last few years. The reasons for the great success are basically the supply of new low environmental impact recreational services, that are alternative to the traditional tourist packages, and the possibility, supplied by rural tourism, to get near to nature, to its cycles and its equilibrium.

The need for re-establishing a contact with the natural environment, on one hand, and the concern for its preservation, on the other, are indeed topical themes that are increasingly common to the different social and economic groups of modern societies.

Organic farming, for its part, responds, in an efficient and stimulating way, to this wish of nature. It favours the preservation and enhancement of rural resources, agricultural systems, local landscapes and communities, and, at the same time, through the supply of healthy and genuine products, it acts on the diet that is a crucial aspect of the everyday life.

Lastly, it seems important to mention, in this context, the so-called “organic small-scale markets”, organised by local bodies and associations, to upgrade a village, a district or a natural area, supplying tourists and residents with a pleasant attractive. These are, mostly, occasional events in which organic producers exhibit and sell their own goods together with bee-keepers, craftsmen and artists, retailers of herb-products, booksellers, organic, environmentalists', volunteers' associations and other agents of the ecological world and of "natural living". Within these fair-markets other activities and events are also organised to enhance the informational and promotional aspect of the event, beyond the merely commercial one.

Annex 1. Inspection bodies in Italy

Suolo e Salute Associazione
Via Abbazia, 17 - 61032 Fano (PS)
Tel +39 0721/830373 - Fax 0721/830373
suoloesa@tin.it
www.ctcom.it/suoloesalute

CCPB Consorzio per il controllo dei prodotti Biologici
Via I. Barozzi, 8 – 40126 Bologna (BO)
Tel +39 051/254688/255198 - Fax 051/254842
ccpb@ccpb.it
www.ccpb.it

QC&I International Services sas
Via Parigini Loc. Basciano – 50035 Monteriggioni
Siena (SI)
Tel +39 0557/3227234 - Fax 0557/329907
lettera@qci.it

IMC Istituto Mediterraneo di Certificazione srl
Via C. Pisacane,53 – 60019 Senigallia (AN)
Tel +39 071/7928725 - Fax 071/7910043
imc@indi.it
www.adrialand.it

ECOCERT ITALIA
C.so delle Provincie, 60 -95127 Catania (CT)
Tel +39 095/442746 - Fax 095/505094
ecocertitalia@ctonline.it

BIOS srl
Via Monte Grappa, 736063 Marostica (VI)
Tel +39 0424/471125 - Fax 0424/476947
itbios@tin.it

BIOAGRICOOP
Via Fucini 10 - 40033 Casalecchio di Reno (BO)
Tel +39 095/442746 - Fax 095/505094
bioagri@mail.asianet.it
www.bioagricoop.it

AIAB Associazione Italiana per l'Agricoltura Biologica
Strada Maggiore, 29 - 40125 Bologna (BO)
Tel +39 051/272986 - Fax 051/232011
aiab@aiab.it
www.aiab.it

CODEX
Strada Naviglia 11/a - 43100 Parma (PR)
Tel +39 0521/460735 - Fax 0521/465064

BIOZERT srl Certificazione di prodotti biologici
Auf dem Kreuz, 58 - 86152 Ausburg (Germania)
Tel 0049821/3467650 - Fax 0049821/3467655

Annex 2. Italian producers' associations

Name	Address	TEL	FAX
AGRIOS	Via della Chiesa, 3 39018 Terlano (BZ)	0471/918367- 57101	
APOFRUIT	Via Ravennate, 1345 47023 Cesena (FO)	0547/643111	
ASPROFRUT	Piazza Foro Boario 12100 Cuneo		
ASSOFRUIT	Via Giovanni XXII, 30 75020 Scanzano Ionico (MT)	0835/953951	0835/953951
AGRIBIOPIEMONTE	Loc. Brocchetto,3 12050 Cissone (CN)	0173/748140	0173/748140
A.VE.PRO.BIO	Via Manzoni, 99 37050 Campagnola di Zevio (VR)	045/8731731	045/8731791
A.PRO.BIO.FRIULI	Via Spilimbergo, 198 33034 Fagagna (UD)	0342/810568	0342/810568
LA BUONA TERRA	Via Fornaci S. Cipriano, 20 25017 Lonato (BS)	030/9133263	030/9133263
C.T.P.B.	Piazza Dalmazia, 20/c 50141 Firenze	55413173	055/413172
ASSOCIAZIONE UMBRA BIOLOGICA	c/o Centro Agroalimentare Via N. Sauro, 4/c 06034 Foligno (PG)	0742/344214	0742/341001
PRO.B.E.R	Via Fioravanti, 22 40129 Bologna	051/6313374	
A.T.A.BIO	Via Coni Zugna, 9 38100 Trento	461261360	
IL BURATTO	Via Colle Rosetta 01033 Civitacastellana (VT)	0761/542000	0761/542001
AMAB	Via Po, 25/c 00198 Roma	06/84497423- 844971	06/84497267
AQB	Via Bazzini, 4 20131 Milano	02/48843653	02/48843653
TERRA SANA ITALIA	Via Flaminia, 50 61030 Montefelcino (PS)	0721/725273	0721/725273
ASS.PRODUTTORI BIODINAMICI	Via Mosche, 79 37045 Legnago (VR)	0442/629358	0442/629358
ASS. PRODUTTORI BIOLOGICI SARDI	Via XX Settembre, 25 09125 Cagliari	070/652842	070/651432