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**ORGANIC AGRICULTURE IN ITALY:  
ACTUAL SITUATION AND PERSPECTIVES**

by

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**ABSTRACT**

During the last five years, organic agriculture methods have taken stronger roots also in Italy.

Yields are generally low, but economic results can be enough satisfactory. Profitability depends mostly on the possibility to obtain a premium price. However, though noticeable efforts were done, there are still problems on the market side. Safeguard of consumers from frauds, and certification of the "organic" products are the two main problems that organic producers and public authorities have to face.

Though organic agriculture is not the only solution to environment and overproduction problems, it can give some contribution to them. There are some interesting market opportunities for organic products. Many people have declared their willingness to pay a 30% higher price for them. Recent EEC financial aids may contribute to a wider spread of organic agriculture.

**1. Introduction**

As Italian agriculture had reached a high level of technical progress in the Eighties, some people started to point out a growing number of criticisms about conventional farm practices and to suggest different ways of producing.

Conventional and especially input intensive techniques are criticized mainly because they determine either different types of environmental pollution and damages or endanger human health through chemical use and management.

For these reasons a growing interest has arisen towards low input - chemical saving production techniques. Integrated pest control, and minimum tillage are those that have received more application, more field research and more success. However, especially during the last five years, some alternative methods of agricultural production have taken stronger roots. In Italy these are related to the so called "agricoltura biologica", or what in English is defined "organic agriculture" (briefly o.a.). This term may include the biodynamic, the Howard-Balfour, the Lemaire-Boucher, the macrobiotic, the Fukuoka methods etc...

A common feature of all these organic methods is the concept of nature and particularly soil as a complex living organism, continually threatened by massive use of inputs with heavy and dangerous environmental impacts.

So these methods refuse any sort of synthetic chemicals products or other interventions, that are thought to be hazardous to the environment.

While the validity of some proposals, like minimum and no tillage, manure use and rotations is confirmed by agricultural research and thus they could be acceptable also by conventional agriculture if they were economically convenient, on the other hand, other proposals, linked directly to philosophic theories, seem to have no scientific grounds until now. It is also extremely difficult to demonstrate the environmental danger due to plastic mulching, plastic greenhouses or from dwarf rootstocks, modern inputs which have been all rejected by organic farmers.

However, what mainly makes o.a. worth considering is the fact that nowadays it is going to assume economic and market relevance in the context of environmental policy.

## 2. O.a. farms in Italy and in Veneto Region

O.a. is quite a recent phenomenon in Italy: first conversions from conventional practices started to take place during the second half of the Seventies.

At the beginning it was conceived as a rebellion against prevalent life-styles. O.a. was intended as total experience. Self-sufficiency and the intrinsic quality of healthy products were the main goals, rather than profit. Only surpluses were sold on the local market and only in a few cases products were sent to urban "natural" food shops and restaurants. The farms were generally of low acreage, and were often located in marginal areas with low productivity.

But in the last few years phenomena like the public's growing ecological consciousness and the development of natural and traditional herbal medicines have generated market and structural changes in the o.a. world.

In 1988 the Italian Association for O.A. (A.I.A.B.) was founded with the aim of encouraging the spread of organic techniques. Following the I.F.O.A.M. (International Federation of Organic Agriculture Movements), it prepares and continues to keep organic farming prescriptions up to date.

Although ideological and ecological motivations are still the basic reasons to become organic producers in many situations, there is a growing number of farmers who have converted their land to o.a. partially or totally, especially for reasons of profitability.

### 2.1 Structural characteristics

Today o.a. is an heterogeneous reality, which is difficult to define.

A recent survey (Albrizio, 1990) on o.a. estimates that in Italy there are about 800 organic farms, covering a surface of about 15,000 hectares. One third of these farms is currently converting soils from conventional into organic practices. Compared with other European countries the size of o.a. is still quite small. West Germany is supposed to have 2,400 o.a. farms covering 36,000 ha, while in France there are about 5,000 farms with a total surface of 75,000 ha. The average total farm surface is 19.5 ha, almost thrice the Italian farm average (7.2 ha); however almost half of the farms have less than five hectares. The phenomenon is more widespread in the northern and central regions (85% of the surface, 69% of the farms), and almost half of the farms are located in hill areas.

Cereals and forage-crops are cultivated in 3/4 of the acreage. They

are found mostly in the medium-large size farms, where integration between cereals and cattle, a basic element of o.a., can be achieved better. Livestock breeding and bee-keeping regard more than 40% of the farms. Fruit and vegetables are grown especially in the plains of North and South Italy. Olive oil is produced mainly in the Central regions, while wine grapes are spread evenly all over the national territory.

Almost everywhere organic farms are mostly managed directly by the farmer and 13% are cooperatives. Unlike conventional agriculture, o.a. farmers are quite young. In fact 40% of organic farmers are aged between 25 and 34 years. Cultural level is generally high: more than half of them have a high school diploma and more than a fourth have a degree certificate. Organic farms seem to be more labour intensive than conventional farms, with less underemployment. E.g., reported o.a. labour need increments in relation to conventional techniques are the following: +136.7% for water melon, +33.8% for melon, +254.7% for onion and +15.7% for wheat (Bartola et al., 1990).

35% of the farms are without any kind of technical assistance. Public extension services concerns only 4% of the farms, the others are assisted mainly by private consultants, especially from those supported by associations. Actually 40% of the farms, mainly located in northern Italy, certify their products as organic. But public intervention is scarce also in other fields: only 23% of organic producers receive credit facilities and only one third makes chemical residue analyses, entirely at their own expense.

Beside of national informations, we refer about o.a. situation in Veneto, a Region where highly intensive farming and related pollution problems are present.

In this Region the total surface of organic farms ranges from 0.25 to 158 hectares, with an average of 10.2 ha. This means that it is difficult to identify a single organic farm typology, but generally an organic farm has a surface which is almost double the Veneto average (5.5 ha). However, due to the presence of many hedges and woods, organic farms have a lower percentage of crop surface than the conventional ones. Farmer ownership is the main form of management, but it is not so frequent as in the other farms. Irrigation regards 36% of the overall surface and is achieved mainly by water flooding and sprinkling. Water pollution is currently a serious problem that some organic farmers are facing.

Cow and green manures (mustard and some leguminous plants) are the most frequently used tools for soil fertilization. Composts regards only 16% of the farms. However, unlike many other national and foreign situations, integration between crop and cattle breeding, one of the most recommended organic practices, is not widely utilized by Veneto organic farms. Where animals are bred, they are used mainly for manure production and for home consumption: an organic market for livestock products is still almost completely absent (there is only a weak demand of organic milk and eggs, but organic meat is not considered by the consumer yet).

The survey found that 40% of the organic farm surface is devoted to cereals and other grain productions, 30% to forages, 13% to vegetables and 17% to fruit. But the last two product groups are of great economic importance.

Most of the farms have been converted to organic methods in recent years. More than 65% started after 1987. And almost 50% of the farmers have less than three years of experience in organic techniques. Conversion from conventional to organic practices took place contemporaneously in all the land in some farms while it was gradual in others. As the farmers' experience grew, converted surfaces were extended.

Farmers don't follow strictly a specific organic method or philosophy,

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but use a mix of techniques derived from different organic schools. Probably this is due to the need to try out the practices best suited to their farm environment. However most of them (80%) comply with AIAB prescriptions, while the others mainly follow the biodynamic philosophical method.

As at the national level, most of Veneto organic farms are managed by young entrepreneurs (aged 30-40 years) who are usually employed full-time, while some family members may contribute part-time to farm labour needs. Specialized technical assistance is scarcely present. Cooperation and market integration have not been sufficiently developed yet, although they are increasing.

## 2.2 Economic results

Reports on profitability give different results, as the following short summary about some organic production experiences drawn from literature show.

Strawberries: high quality (tastiness), but too low yields and too high per unit cost that can only partially (60%) be covered by a higher price;

Melons: good tastiness, but no demand for higher price organic melons, high production risk;

Watermelons: bad and ugly fruits refused by consumers, poor yields;

Apples, pears, peaches: biodynamic methods of control have completely failed against some pest. Yields are 80% less and prices are only 30% more than conventional production. In these conditions organic fruit is clearly not profitable without public aid. Some organic farmers think that a 40% yield reduction would be economically acceptable;

Olives: good results on pest control by promoting hedge growth;

Eggs: very high prices (more than double compared with the conventional ones) for eggs produced by traditional rural hen breeding.

There is little reliable research on the economic results obtained by organic farms, and the types of farm analyzed are different. However we want briefly to present the main results of two farm surveys that were carried out in the Veneto Region in the last year. The first is an analysis of 15 small size farms (Defrancesco - Zolin, 1990), some of which are specialized, while others are multiproduct; the second regards a sample of 10 fruit growing farms (Foscolo, 1990).

a. Multiproduct organic farms. Cereals and soybean seem to be not profitable: yields are too low and prices aren't satisfactory because farmers haven't found an alternative market for these products yet. So, for these commodities, they have to use the same sale channels as conventional ones, with no premium price added. Per hectare production costs do not seem to be low enough. On the contrary, the larger the share of the farm surface and gross output dedicated to fruit and vegetables, the more returns increase. Fruit cultivations maximize return on labour, while vegetables maximize return on land. Animal productions have a considerable share of gross output only in a few cases; livestock is generally bred to obtain manure. There are decreases from 50% to 30% in yields in relation to those commonly obtained with conventional techniques. Expenses for organic fertilizers and admitted pesticides are about 45% of total input expenses.

b. Organic fruit farms. This type of farms show a quite high average gross income. The value of production per hectare is greater where more surface is devoted to pears, apples and kiwis and smaller where wine grapes, peaches and cereal cover larger share of the land. The former

products in fact are marketed at higher prices than those produced conventionally and yields are generally not too different. For wine and cereals, on the other hand, the main problem is to find proper profitable marketing channels, while for peaches pest control is not able to avoid heavy yield losses yet. Due to the low level of expenses, total gross margins of organic fruit farms range from 65% to 75% of gross product, but in some cases reach 85%. Average net income is 15,000 US dollars per unit of work, that is an amount close to that obtainable in conventional specialized fruit farms of the same size in the Region.

Both types of farm have shown some common economic features and problems.

a. Some farms still bear high machinery costs. This is due to conversion of their agricultural systems; but, once this process is completed, this cost will be lowered because of the less intensive mechanical interventions on the soil, required by organic techniques.

b. Labour is intensively used in each farm. More labour is required for mechanical intervention against weeds and other pests and for products selection and packaging. Moreover, the farmer has to control his crops constantly in order to develop more effective interventions. Great importance is attached to professional farmer skills, which are different from those required in conventional agriculture, and extension service plays a basic role especially when the farmer is converting his land to o.a.

c. Gross output is determined mostly by the ability of the producer to find the right marketing channel that can adequately reward him through high premium prices.

d. Sometimes, difficulties arise also on the input demand side, on buying specific products for pest control, because their supply is not well organized as yet.

e. The conversion time-lag determines a large cost for the farm, due to the lack of organic production for a period of three to five years. During this time yields decline sharply and products are generally sold through conventional channels, because many distributors refuse to sell products obtained from fields under conversion.

Given that yields and prices are the two most important factors for the profitability of o.a., we wish to present some yields and prices variations drawn from different surveys. Data reported in table 1 are intended to give an idea of the main technical and economic differences between organic and conventional agriculture.

The average reduction in o.a. yields seems to be 50%, while the average price increase is about 120%. Both the percentages seem to be too high compared with values generally reported. However it has to be stated that yields and prices are often quite different in relation to the techniques adopted, the farm environment and local market conditions, as is shown by some of the yields variations presented in table 1.

We have to underline a further two points about prices and yields:

a. Although it has been growing significantly, the organic products market, does not always guarantee constant price differences: in fact noticeable seasonal variations have been found, and price instability seems to be greater than for the conventional products. For the same product organic price differences can range from 20 to more than 100% compared with conventional products.

b. Sometimes o.a. low yields can be related also to the farmer's poor training on o.a.. An average 30% yield reduction seems to be more probable for a well managed o.a.. In fact, another survey on Emilia Romagna organic farms, where farmers are better trained and there is a better extension service, indicates a remarkable reduction in the yields gap (Bartola et

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al., 1990). For example onion and barley yield variations have been found to be only -17% and -6.4% respectively. Given an efficient marketing organization, the economic validity of most of these farms seems to be confirmed by now: their average gross margin is greater than conventional farms, if related to a unit of land, and the same, if related to a unit of work.

Table 1: Yield and price differences between organic and conventional agriculture for some products in Italy.

Products	Yield differences		Price differences
	(1)	(2)	(3)
APPLES		-13	111
BARLEY	-50	-80	
BEAN	-56	-75	
CABBAGE	-50	-21	50
CARROT		-36	370
CELERY			322
CORN	-50	-49	182
HARD WHEAT			69
KIWI			50
LETTUCE		-61	50
OLIVE OIL			95
ONION	-65	-38	199
ORANGE			76
PEA	-50		
PEACHES		-63	53
PEARS		-53	18
POTATO	-65	-26	176
RICE	-17		
SOFT WHEAT	-50	-34	84
SOYBEAN	-60	-4	
STAWBERRY			90
SUGARBEET	-80		
SUNFLOWER	-64		
TOMATO	-76		48

Sources:

- (1) Persona R. - Crespolani C.: Produrre pensando al consumatore, "L'Informatore Agrario", no. 22, 1987.
- (2) Defrancesco E. - Zolin M.B.: Agricoltura biologica e piccola impresa, "Scenari della Società e del Territorio", no. 2, 1990.
- (3) Chiorri M. - Santucci F.M.: Agricoltura biologica: un occhio alla natura e uno al tornaconto, "L'Informatore Agrario", no. 37, 1990 and other sources.

### 3. Organic products market

In the past decades significant changes in consumption patterns have taken place. Income and substitution effects have reduced the weight of food expenses on total family expenditure. Meanwhile, consumer were

experiencing a new scale of needs and preferences, a higher cultural level and more free time. Moreover a profound revolution in food consumption habits and growing standardization in the entire agrifood industry have taken place. All these events have induced some retailers to seek market niches where consumers refusing massification could get more satisfaction. Moreover new cultural values relating to personal and health care and the wish to rediscover forgotten traditional tastes are becoming more important in society.

During the Eighties public opinion has become increasingly more aware of the importance of the so-called "environmental emergency", especially after the Chernobyl atomic disaster and some widespread cases of agriculture related pollution (e.g. herbicides in potable water). Moreover, people have started to pay more attention to preventative medicine and to the role of nutrition in keeping good health conditions. In this context, chemicals used in agriculture have been increasingly considered one of the worst threats to the natural environment and human health. So, some advanced consumers have started to search for "clean food".

Following a recent sample survey (Boatto - Gios, 1990), consumers points of view and behaviors about o.a. can be summarized as below:

a. 85% of the interviewed people are interested in buying organic food, 15% consume organic products currently.

b. Interest in organic food is more determined by health motivations than tastiness or nutritional ones. More attention to health considerations is paid by women, citizens and people with high cultural levels, while the tastiness motivation is particularly frequent among people from rural areas. Both interest and consumption are higher for fruit and vegetables.

c. Most of the people have declared they are willing to pay a 30% higher price for o.a. products than for similar conventional ones.

d. Surprisingly 43% stated they already consume organic food; however only 4% of them consume it regularly; 25% consume organic food occasionally and 75% at least once a week.

e. The difficulties in finding the products and the scarce guarantee of their organic origin are the motivations that mostly discourage purchases of organic food products; while price and external aspect are of less importance.

f. Knowledge of trademarks is scarce. Only 46% consider trademarks as guarantees.

Undoubtedly some of these results need further research. In fact, some organic cooperatives have found considerable difficulties in enlarging their sales outlets because the presumed willingness to pay higher prices for organic products was not shown by consumers as it had been supposed, and most consumers are still reported to disdain to buy fruit and vegetables without perfect appearance.

The organic products market is still quite limited: Italian o.a. producers total gross sales are estimated to be 450 million US dollar. Half of this gross revenue comes from direct sales from producer to consumer, half from the processing-marketing channels for organic food. Imports contribute largely to organic food supply. They come mainly from France, Germany, Great Britain, Switzerland, United States and Israel. Their value is estimated at about 250 million US dollar. This suggests that there could still be wide market opportunities for Italian organic producers.

There are about 1,700 organic food retail outlets and their number is rapidly increasing in spite of the opposing general trend of other food retail outlets. Individual sale points guarantee a direct contact between buyer and seller, favours the creation of a climate of trust, and maintain the "status" sought by some buyers who like to distinguish themselves from other consumers. Moreover, direct selling is considered the most suitable

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way to obtain appreciation of the quality difference in organic products. However, from another viewpoint, low turnover may limit the growth of a single retailer and consequently have a breaking effect on o.a. development.

Though the organic food market is not well structured yet, there are some new, interesting experiences. In fact, following a rapidly increasing demand, producers have attempted to organize their supply.

As farm economic results have shown, income of most organic farms depends strictly on access to ever larger market segments, which give a premium price to the quality difference. Efficient intermediation structures are generally the basic requirement to make o.a. really profitable. Those who distribute their products individually face greater risks than those utilizing intermediation.

Cooperatives, associations, and other types of groups have been created: all are devoted to regulating and putting into practice organic methods of production, guaranteeing organic farms output, and possibly to selling the products directly. Currently there are 75 processing and marketing cooperatives, 13 regional, 6 interregional and 3 national associations and 5 extension cooperatives (Del Fabro, 1990).

These structures have initially given essential services to the farmers: extension, product certification, purchases of inputs. But, as more o.a. was increasing business, marketing has become the most important service, mainly performed by cooperative structures. Major problems that these producer organizations have had to face are fragmented production, the presence of many farms with poor organization and intermittent supplies.

However, gradually, rationalization is going on and remarkable efforts are being made to widen selections, to lower management costs and to reduce the number of brokers. Some first interregional agreements for product exchanges have been made. There are cooperatives that have also started to sell organic products to supermarkets and to develop marketing agreements with organic distributors of other countries. Thus many organic farmers are adopting different strategies to present themselves continually working to face better on the market. Starting from nothing, there is more than one organic cooperative, whose gross sales have increased two or three times from one year to the next. If marketing management is good, revenues can be very high even with small structures.

A well managed cooperative functions are to collect products from member farms, to give production indications, according to market requirements, and to take care of quality control. The cooperative stipulates an annual contract with each o.a. farm. According to farm conditions, it decides which crops should be cultivated on farm soil, and it assures a minimum price for all production that is always higher than that of conventional products (e.g. from 20 to 50%). So the producer has the advantage of selling all his output satisfactorily.

We present two outstanding cases:

a. The Alce Nero (the "black elk") is a Marche cooperative that produces, processes and sells 1,500 metric tons of organic cereals and employs 25 full time workers. Its products are flours, pastas and flakes. Quality is controlled by Marche Association of O.a. (AMAB) which certifies organic origin on the market.

b. Il Canestro (the "basket") is a Lazio Region organic consumers-producers cooperative with over than 5,000 partners. It is a leading firm in organic products marketing, supplying different organic shops and restaurants all over the country.

But, beside of successful cases, there are still some problems. Sometimes marketing costs to obtain a premium price can be very high, or,

as reported before, organic producers can meet some difficulties in selling all their production at rewarding prices, as they have to follow traditional channels. In some cases retailer prices can be even 100-200% higher than the producer prices.

Moreover producers have to face the demand of strong guarantees in the goods' quality and origin coming from many consumers. Frauds are reported to be frequent in some areas: there have been some wholesalers who sold conventional products at 200% higher prices than normal ones, by arbitrarily labelling them as "organic".

Today organic product controls are generally performed by cooperatives or associations, that are not necessarily the same of the marketing cooperative. In the absence of a general regulatory law, many collective guarantee trademarks are currently granted to farmers that follow statutory regulations where admitted techniques are prescribed. Production organic quality certification is often made by the same technicians' organizations. However some of them have recognized that they aren't able to guarantee that all the sold production is really "organically" produced. Some organic operators agree that food residual analyses, that can only be done by sample, are not sufficient to guarantee the organic origin of the products. For this reason, the most serious associations have started to require controls in all the stages of production: from cultivation (from the seeding time to the harvest) to processing and to conservation.

#### 4. The legislative situation

Compelled by public opinion, which is ever more concerned about environmental problems, as well as by ecological lobbies, public authorities have started to recognize that the growth of demand for organic products and relative development possibilities justify the need for public intervention.

During the last decade there have been many EEC acts relating to environment safeguard problems and their connections with agriculture; and in Italy, many important laws on agricultural environment pollution have been passed, either at national or regional level, especially concerning water protection and soil defense.

Recognizing the links between agriculture-related pollution problems and overproduction situations, the 1985 Green Book suggested o.a. as a possible means to limit some risks to the environment and human health, and so, jointly with other protection measures, proposed o.a. promotion, using a specific guarantee trademark. In 1986 the EEC Parliament also recognized advantages of o.a..

Firstly, Regulation 797/85 provides financial aids for investments to farmers who start to adopt environment-safe techniques (including those which refer to o.a.) and for information, professional training, extension, and research into pilot projects on these agricultural techniques. The following reg. 1760/87 gives financial aid to farmers who get a minimum 20% decrease of their previous average production by adopting low chemical inputs methods and o.a. techniques, especially in the more environmentally sensitive areas. Moreover, it provides support to professional training on low environmental impact techniques, financial aid for setting up organic producers associations and to investments on organic product processing and marketing. In Italy enforcement of this regulation started slowly and contributions (150-180 ECU/ha for annual crops, 300-900 ECU/ha for perennial crops) provided by applicative reg. 4115/89 for the adoption of o.a. techniques, have only been available to farmers since 1990.

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However, at the EEC level as the national one, though there was an EEC Commission directive proposal in 1989 and many national law proposals have been presented for o.a. regulation, at present (October 1990) none of them has been enacted yet. On the contrary, specific laws on o.a. have been already approved by two Regional Administrations: Veneto and Lazio. This situation doesn't contribute to a unified regulation, which is a fundamental requirement for the development of a well organized organic product market; rather it generates more uncertainty and confusion.

We shall briefly describe the major aspects of these (proposed or approved) o.a. regulations.

a. Almost in all the laws and proposals o.a. definition is given by referring to IFOAM prescriptions or AIAB's similar ones.

b. To get organic producer status a farm must present a program on the organic techniques it intends to adopt. The proposals differ on the length of the conversion period. Partial gradual conversion of the farm surface is possible. All the regulations foresee a register of organic farms. Some law proposals also recognize legal status for organic producer associations.

c. Financial aids is provided for organic farms and for o.a. research, extension and professional training development. Different institutions and funds devoted to these activities are proposed.

d. Organic food imports are only admitted by countries having the same EEC regulations.

e. In attempting to avoid discrimination against conventional products, the EEC proposal foresees voluntary controls for all the phases of production, transformation, and sale. An indication of compliance with organic prescriptions is given to the farmer, by means of a specific label, reporting the methods used and the controls undertaken on the product. On the other hand, the Italian Government proposal prescribes a compulsory national organic trademark jointly with trademarks of specific organic producer associations assuring compliance with prescriptions. Controls have to be performed by producer associations under the Ministry of Agriculture supervision. Violations should be punished by suspending a guilty farm from the register and by monetary penalties. A specific label for converting farms has also been proposed.

Which type of guarantee trademark is more adequate for organic products is probably the more critical issue. It should mainly be useful either to identify organic products or to diversify them from other ones. However it seems unfeasible to establish a label that can fully guarantee the lack of chemical residues, because it is impossible to avoid some indirect sources of pollution, especially when some farm plots aren't converted yet. For this reason, voluntary, instead of compulsory, trademarks seem to be more adequate, given that they promote producers' selfcontrol and responsibility in guaranteeing organic quality.

## 5. Concluding remarks and o.a. perspectives

There is a need for a policy not only to prevent but also to correct negative external effects of some forms of intensive agriculture. We need to protect the environment, the means of survival for the farmers themselves. However this must be done without lowering their living standards. The new agricultural policy has to take account of the two main goals: environment protection and satisfactory farmers incomes.

In this context, o.a. can be one means to develop this new policy. It can be attractive for some advantages it offers. The most important ones we can attribute to it seem to be the following:

a. Sustainability of agricultural processes due to fossile energy saving, utilization of local renewable resources, without chemical pollution but keeping a high level of soil fertility (physical, chemical and biological) by the use of organic matter;

b. Development of intrinsic instead of external food quality meaning especially health safety;

c. Conservation and valorization of local genetic resources such as local varieties and breeds, which are better suited to marginal areas, as well as rural landscape and cultural assets;

d. Limitation of the rural exodus, given the greater labour usually required by o.a., and restructuring of the social and economic texture, by creating new job opportunities and services (agritourism) and improving physical and pscycological condition of the farmers and their families.

As a consequence of the previous issues, o.a. has better possibilities in marginal areas where yields differences with conventional techniques are less. In some zones this is the only way to utilize land that, otherwise, would be lost to agriculture. However, o.a. practices may also be useful in some high intensive production areas where pollution risks are grater. In fact, due to its generally lower yields than conventional agriculture, it could be a means to reduce production surpluses and environmental pollution at the same time, as EEC agricultural policy have recognized.

However o.a. is not the only solution to environment re-equilibrium problems. It's difficult to quantify the real contibution that o.a. can make to environmental conservation. This will depend mostly on its diffusion, although a large scale expansion doesn't seem to be likely in the next future, given technical and economic problems and market limitations.

Moreover there are still some points of concern and doubts about o.a. that need to be answered with more certainty:

a. the relation between agricultural product quality and alternative methods of production;

b. technical and economic feasibility of non conventional practices;

c. consumers' real interest for non standard agriculture products.

About the presumed higher quality levels of organic food some rsearchers assert that till now no chemical analysis has been able to distinguish it from products obtained with conventional techniques applied currently and there is no scientific proof that the former is safer.

Due to a still generally great productivity gap, the main problem of organic products is represented by their costs of production. Although costs per hectare are usually lower than those of conventional techniques, costs per unit of product are usually higher. Thus, without a premium price or some kind of public contribution, o.a. is surely not profitable, unless new research improves the productivity of organic techniques.

University and other research institution have started to take an interest in o.a. only over the past few years. Generally, o.a. specialized technicians are self-taught. O.a. evolution will be deeply influenced by the development path of technological innovation and by the risk level one shall face in adopting new organic techniques and by the development of adequate new professional skills on o.a. techniques. Transition to o.a. ought to be gradual in order to avoid endangering economic and financial conditions of the farm. Consequently, the farmer has more financial needs during conversion, and public contributions and extension services should be focused on this period. Jointly with higher organic product prices, the EEC per hectare contribution seems to be sufficient to promote conversion to o.a. practices in many cases.

Moreover a larger organic livestock product market shall be necessary to develop the production of other organic commodities, otherwise a growing

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rigidity of manure supply might seriously limit o.a.

Although the gap between supply and demand seems to be still quite large and organic food seems to have high income elasticity, there are some doubts that o.a. could bring about high prices also in the future. But even if a larger supply could determine a price reduction, public support to o.a. could be justified by its ecological functions.

Environmental conservation is important, but to develop o.a., farmers have to find the most appropriate marketing strategy to obtain satisfactory income. Surveys have shown a potentially expanding demand and interesting opportunities for organic producers. However, at present, organic market is still a particular market, which is not as yet completely well structured and organized.

The healthiness of organic products is not a perceivable feature. That is why trademarks and specialized distribution are required for organic products and also why producer-distributor integration must be stronger than for conventional products. There is especially a need for an efficient collecting and distribution system to guarantee that the farmer sells his products at higher prices, also through advertising. Organic market operators should sustain and encourage people who are more influenced by ecological trends to obtain more market expansion in the short-medium term. Success will also depend on their ability to perform adequate marketing mix actions.

Though limited, but if well organized, o.a. outlets might offer a useful contribution to finding acceptable solutions to serious market problems that producers of conventional agriculture are currently facing.

Finally, it has to be stated that till now o.a. has produced food mainly for some high income social classes or ideologically motivated consumers, both willing to pay a premium price. Thus, if consumption patterns don't change deeply, i.e. if organic food is not conceived as necessary in future consumption patterns, it seems unrealistic to envisage agriculture without most of the conventional technology. But this would be to move to a different development model. We shouldn't forget that the existence of modern agricultural technology has made large quantities of different foods available at low prices to almost all the population. More realistic possibilities in the short-medium term seem to come from a wider spread of low input (especially chemicals) techniques such as integrated pest management.

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