



Prospects for Farmers' Support:
Advisory Services in European AKIS

AKIS and advisory services in Cyprus
Report for the AKIS inventory (WP3) of the PRO AKIS project

April 2014

Author:
Alex Koutsouris
Agricultural University of Athens



Contact: koutsouris@aua.gr

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 311994

Please reference this report as follows:

Koutsouris, A. (2014): AKIS and advisory services in Cyprus. Report for the AKIS inventory (WP3) of the PRO AKIS project. Online resource: www.proakis.eu/publicationsandevents/pubs

Executive summary

The main aim of the report is to provide a comprehensive description of the Agricultural Knowledge and Information System (AKIS) in Cyprus, with a particular focus on agricultural advisory services. The description includes history, policy, funding, advisory methods and a section on how the Farm Advisory System (FAS) was implemented.

This report represents an output of the PRO AKIS project (Prospects for Farmers' Support: Advisory Services in the European Agricultural Knowledge and Information Systems'). It is one of 27 country reports that were produced in 2013 by project partners and subcontractors for compiling an inventory of Agricultural Knowledge and Information Systems. AKIS describe the exchange of knowledge and supporting services between many diverse actors from the first, second or third sector in rural areas. AKIS provide farmers with relevant knowledge and networks around innovations in agriculture. Findings from the 27 country reports were presented at three regional workshops across Europe in February and March 2014, discussed with stakeholders and experts, and feedback integrated in the reports.

The agricultural sector in Cyprus is characterised by one of the highest proportions of small-scale family farms in Europe. The average age of farmers is higher than in most European countries (63% are over 54 years). Crop production is of almost equal importance as livestock production (47:53 in terms of value of production, 2010). The main crops are cereals and fodder crops, olive plantations, vineyards, fruit trees, potatoes, nuts, fresh vegetables and carobs. Out of the total agricultural land almost 19% is irrigated (2010). The breeding of pigs is important in Cyprus followed by small ruminants and cattle.

Cyprus has a substantial component of its AKIS within a single organisation (MANRE, the Ministry of Agriculture, Natural Resources and Environment). The Agriculture Division of MANRE undertakes activities in research through ARI (the Agricultural Research Institute) as well as in extension and farmers' education/training (Agricultural Extension Section of the Department of Agriculture). The Agricultural Extension Section comprises the headquarters and six District Agricultural Offices further divided into 30 smaller target-areas called "agricultural beats". Currently, the extension service employs 120 people (extension officers and technicians) of whom 63% are university graduates. The Agricultural Extension Service aims to inform MANRE and ARI on problems that farmers encounter, to train farmers on innovations regarding agriculture and home economics, and to plan, promote and evaluate extension programs as well as a wide variety of agricultural projects. Its activities are complemented by private consultants and private (input) shops (run by agronomists), cooperatives (dealing with the processing and marketing of produces) and producers groups.

Cyprus has retained a strong, largely publicly funded advisory service, free of charge for farmers. There is recognition that given the very small size of farm holdings (around 3 ha) in Cyprus the government should support farmers through a public advisory service.

Table of contents

Executive summary	3
List of Acronyms.....	5
List of Figures	5
List of Tables.....	5
1. Main structural characteristics of agricultural sector of the country.....	6
2. Characteristics of Agricultural Knowledge and Information System (AKIS).....	7
2.1 AKIS description.....	7
2.2 AKIS diagram	10
3. History of the advisory system.....	12
4. The Agricultural Advisory Service(s).....	14
5. Characteristics of Farm Advisory System.....	22
6. Summary and conclusions.....	24
7. Methodological reflections and acknowledgements	26
8. References	27
9. Appendices	29
9.1 List and contact of organisations forming AKIS	29
9.2 List of interviewed experts	30
9.3 Literature review summary	32

List of Acronyms

Acronym	Explanation
ARI	Agricultural Research Institute
DA	Development Agency
HEIs	Higher Education Institutes
KEGE	District (Local) Agricultural (farmers’) Training Centers
MANRE	Ministry of Agriculture, Natural Resources and Environment
PGs/POs	Producer Groups

List of Figures

Figure 1. Overview of AKIS actors in Cyprus 10

List of Tables

Table 1. Overview of organisations creating the AKIS 11

1. Main structural characteristics of agricultural sector of the country

In Cyprus, agriculture's contribution to employment is as high as 4% (2011) with agriculture contributing 2.3% to the GDP (2010). Farm size is on average very small (around 3 ha) with the majority of agricultural holdings (75%) not exceeding 2 ha (or, 90% under 5 ha). Around 33% of the agricultural population is over 64 years old (63% over 54 years).

Crop production is of almost equal importance to livestock production (47:53 in terms of value of production, 2010). Cereals and fodder crops cover (2010) around 33 thousands ha each, followed by olive plantations (12 thousands ha), fruits (6 thousands ha), nuts (3 thousands ha), fresh vegetables (2 thousands ha), vineyards (8 thousands ha), potatoes (4 thousands ha) and carobs (1 thousand ha). Out of the total agricultural land almost 19% is irrigated (2010).

The harvested production of cereals amounts to 66 thousand tons (2010), with barley accounting for 70% of it. The harvested production of citrus fruits amounts to 113 thousand tons and of potatoes to about 82 thousand tons. The production of olives and carobs is also very important (15 and 10.5 tons). Tomatoes and cucumbers dominate among vegetables (18 and 12 thousand tons, respectively) followed by onions, cabbages and marrows (7, 4 and 4 thousand tons, respectively). Fresh fruit production mainly concerns bananas, apples (6 and 7 thousand tons, respectively), peaches and nectarines (3.5 thousand tons), and figs (3 thousand tons).

The breeding of pigs is important in Cyprus (ca. 38% of the country's livestock units in 2010) followed by small ruminants (sheep and goats; 25%) and cattle (almost 20%).

The European Union is the main destination for exported agricultural products (ca. 73% in 2010). Exports amount to around 86 million Euros thus accounting for 15% of the total country's exports. The main exported raw produce are potatoes (32 m €), citrus fruits (28 m €) and vegetables (9 m €). On the other hand main processed products are Halloumi cheese (42 m €), fruit and vegetable juices (16 m €), meat (10 m €) and wine (2.5 m €).

Overall a number of structural as well as other weaknesses can be identified. These include the very small size and fragmentation of farms; the aged farming population and the lack, on their part, of agricultural education/training; the drought climate and the high costs of irrigation; the lack of a holistic and focused product and export strategy (including the high transportation costs to the EU countries); the lack of a cooperative movement; the lack of product differentiation toward high added value products; and, in general, the low productivity and competitiveness (increasing production costs and decreasing producer prices for plant production which is also decreasing; cheaper imported agricultural products substitute for local production) along with the very low incomes of the farming population.

2. Characteristics of Agricultural Knowledge and Information System (AKIS)

2.1 AKIS description

In Cyprus the main AKIS actors can be depicted as follows:

In the first place, the Ministry of Agriculture, Natural Resources and Environment in Cyprus consists of three divisions, namely the Agriculture Division, the Natural Resources Division and the Environment Division. The Department of Agriculture as well as ARI (the Agricultural Research Institute) are among the six Depts. of the Agricultural Division of the Ministry. The Dept. of Agriculture comprises 14 Sections, one of which is the Agricultural Extension Section.

Extension work is coordinated by the Extension Section at the headquarters in Nicosia in association with the six District Agricultural Offices of the Dept. (together making up the Agricultural Extension Service). The Extension Section comprises five sectors: Extension Program Planning and Implementation, Program Evaluation, Publicity, Home Economics, and National Rural Network. Therefore, the Extension Section coordinates all extension activities in close cooperation with the District offices (including four local agricultural (farmers') training centres – KEGE) and the other specialist sections of the Dept. of Agriculture. Furthermore, wherever and whenever needed, the Extension service communicates with other Depts. within the Ministry to provide a comprehensive solution, i.e. to resolve a certain farming problem.

In terms of Higher Education Institutes (HEIs), the Cyprus University of Technology is a newly established institution (2004; operational since 2007), including the Faculty of Geotechnical Sciences & Environmental Management.

Furthermore, private consultants and private (input) shops (run by agronomists), cooperatives (dealing with the processing and marketing of produces) and producers groups and, of course, individual farmers are active in agriculture.

In Cyprus the main actor generating knowledge is ARI. Due to its recent establishment the University has only recently become an important player in this respect. New knowledge and technology is also imported or generated (experimental plots) by private agronomists' companies (input shops). The major actor linking research and farmers is the Extension Section of the Dept. of Agriculture. The fact that ARI is an integral part of the Dept. of Agriculture facilitates two-way communication between research (ARI) and extension; this is, more or less, also true for the communication between extension (District Offices and 'beats' agronomists) and farmers. Links between the University and the Dept. of Agriculture are developing, although informally.

Therefore, ARI and, lately, the Cyprus University of Technology, along with private (input) companies are the major generators of knowledge or transfer knowledge and innovations from abroad.

Furthermore, it is, more or less, commonly accepted among all actors (see also the literature review in the Appendix) that the Extension Section plays an all important role, esp. in the dissemination of knowledge and technology. Private companies' agronomists as well as producer groups' and cooperatives' agronomists (esp. of the ones applying quality systems) also

contribute to the transfer of knowledge and technology to farmers. Finally, farmer-to-farmer dissemination plays an important role in a small country such as Cyprus.

In a sense, there is not any specific policy framework or formal agreements between the AKIS actors. However, the functioning of the Extension Service covers the Cypriot agriculture needs as a coordination mechanism. More or less, beyond dealing with strictly legal matters (re: the EU Regulations), there is contact with producer groups and coops (as for example District Offices meetings with the Boards of such groups) and the provision of advice to such groups. District Officers and 'beats' extension officers are in contact with farmers and act as two-way communication mechanisms between the Extension Section and farmers. The Extension Section in cooperation with ARI puts together the annual extension programmes which the Section monitors and evaluates (although not always formally – in the strict sense). On the other hand, ARI staff actively participate in the service's educational activities and tries (although without a relevant section/staff or funds) to grasp farmers' problems.

Missing links may be identified between private (input) companies and the extension services as well as between consultancy companies and the service (i.e. beyond legal matters). Such companies however may cooperate with District Offices in case production problems arise.

Nevertheless, some points of criticism or concern are also put forward mainly concerning the increasingly bureaucratic tasks undertaken by the Extension Service as a result of both the country's accession into the EU (2004) and the obligations imposed by the Troika (2013) due to the current crisis (resulting in decreasing contacts with farmers - a fact acknowledged by all actors in Cyprus). Concerns are also expressed about the adequate staffing of the Section, and more generally of the Dept., which along with the pressure for the restructuring (downsizing) of the public sector by the Troika, may result in the downgrading of extension/advisory work. The updating of extension officers knowledge (including extension methodology) has also been put forward (although not as forcefully).

To this, the decreasing interaction of ARI, in the last years, with farmers has to be added. Under the current circumstances both ARI and the Cyprus University of Technology are largely dependent on participation in EU-funded projects which nevertheless do not, more or less, correspond to the needs of the Cypriot agriculture. The two institutions do not have their own mechanisms to disseminate the knowledge they generate; furthermore, they are largely oriented towards publications in scientific journals and less to publications in popular magazines or the (farming) press. An important fact (confirmed by both ARI and the University) is that (very few) farmers have started to ask for specific information related to small-scale projects (mainly analyses) which they fund¹.

As a result, quite a few of the actors in Cypriot agriculture suggest a more intensive cooperation between all the actors concerned (with the lead of the Dept. of Agriculture/ Extension Section). The employment of a network of experimental plots (collaborative experiments) for the generation-testing-adaptation-introduction of innovations is also put forward. For such a collaborative network, the need to focus more on farmers' needs as well as on (the enhancement of) farmers' occupational training and experiential learning is underlined. Farmers, on their part,

¹ The lack of courses on extension in the university should be also underlined.

have to become more open and willing to share their know-how with their colleagues and thus allow for/facilitate farmer-to-farmer transfer of innovations. A further obstacle stems from farmers' unwillingness to pay for advice (since generally they do not currently have to pay) as far as private services are concerned. Additionally, farmers are presented as unwilling to undertake risks while, on the other hand, introduce new cultivations without waiting for the results of experimental plots run by ARI and/or the Extension Section.

A major challenge, of which the extension service is aware of, concerns the increasingly stronger tendency for privatisation which in the case of Cyprus may be enforced by the Troika. This, in turn, is expected to have major repercussions for small scale farmers who predominate in Cyprus - as they are not in a position to pay for advice (which is currently provided for free by the service). As a consequence, this is most likely to lead to land abandonment and degradation.

2.2 AKIS diagram

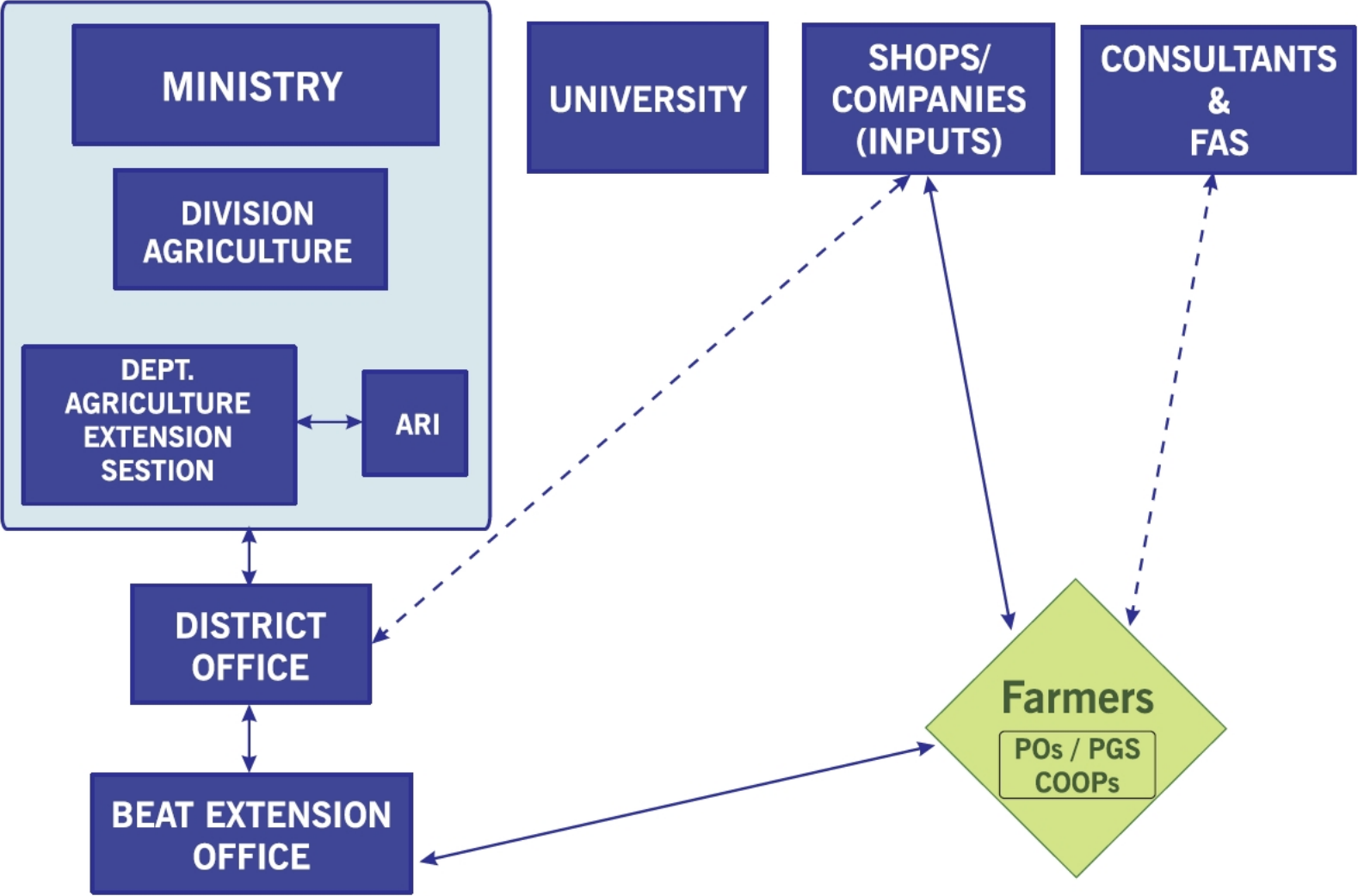


Figure 1. Overview of AKIS actors in Cyprus

Table 1. Overview of organisations creating the AKIS

Provision of service				Source of financing								
Status of the organisation	Type of organisation	Number of organisations	Number of advisors	Public funds			Farmers			Private	NGO	Other (specify)
				EU funds	National funds	Regional funds	Farmers' levies	Farmers' contribution	Billing services	Other products (inputs, outputs)	foundation	
Public sector	Advisory department of the Ministry of agriculture		80	X	X							
	Local/regional agencies			X	X							
	Other (specify)											
Research and Education	University			X	X							X
	Research Institute										X	
	Other education bodies (specify)											
Private sector	Upstream industries									X		
	Downstream industries									X		
	Independent consultant								X			
	Private agricultural advice company								X			
	Farmers' owned advice company											
	Other (specify)											
Farmer based organisations	Farmers' cooperative			X				X				
	Chambers of agriculture											
	Farmers' circles/groups			X				X				
	Other											
NGO												

In Cyprus the cooperatives are identified with the producer groups

3. History of the advisory system

It is worth mentioning that the Extension Section of the Dept. of Agriculture has changed little since its establishment in the 1960s.

As aforementioned, the Sections' headquarters are located in Nicosia. The Extension section coordinates all of the Extension activities with the close cooperation of the District offices and the other specialist sections of the Dept. of Agriculture and/or other Depts. within the Ministry.

Furthermore, for practical purposes and for the facilitation of extension activities, the District offices are subdivided further into 30 smaller target-areas called "agricultural beats"². The number of villages within each beat differs depending on population density and production intensity. Each beat is served by an extension agricultural officer, who is a university graduate (agronomist). Agricultural officers are assisted by agricultural or animal husbandry technicians. Currently, the extension service employs 120 people of whom 63% are university graduates.

In general, the objectives of the Agricultural Extension Service are to inform the Ministry of Agriculture, Natural Resources and Environment as well as the Agricultural Research Institute (ARI) on problems farmers encounter, to train farmers on innovations regarding agriculture and home economics, and to plan, promote and evaluate extension programmes as well as a wide variety of agricultural projects. Extension employees use a variety of extension communication methods (individual, group and mass) to attain such objectives.

Currently, the Extension Section is responsible for the dissemination of cross-compliance rules/prerequisites to farmers and coordinates the National Rural Network, FAS (see below) and farmers' training through seminars in the four District training centres (KEGE) with an emphasis on the Young Farmers programme (150 hours seminars in which trainers are mostly Depts' employees with no additional fee, apprenticeship schemes and short courses. The Section works on the basis of working teams/groups, such as various produces teams (responsible for programming and evaluation of relevant extension programmes), the publicity team, the in-service training team, the library, museum and electronic data processing (for the whole Ministry) team and the ARI (coordination) team.

The District Offices (esp. 'beats') comprise of the first-line extension workers (officers). Officers operate on the basis of 'traditional agricultural extension' in the sense that they are in, more or less, close contact with farmers. Therefore,

- a) farmers make requests and the extension staff either responds to the query - provides a solution to the problem, or addresses the Dept's (or Ministry's) specialists and laboratories (if, for example, further analyses are required); following this, the results are fed back to farmers along with certain recommendations (relating, for example, to the results of an soil and/or leaf analysis
- b) extension officers make all kinds of public announcements (posters at office, SMS to farmers and telephone calls to producer groups, distribution of print materials produced by the Section, etc.) and organise meetings (individual or group, using various audiovisual

² District Offices: Larnaca (4 Beats); Limassol (6 Beats); Nicosia (8 Beats); Paphos (8 Beats); Famagusta (1 Beat); and, Pistilia (4 Beats).

aids) in the framework of their extension programmes (if necessary in the evenings as well, i.e. beyond official working times) which relate to local needs and the National Rural Development Plan (re: CAP 2007-2013). They also monitor the implementation of various measures/projects relating to the NRDP/CAP and make relevant controls, run the KEGE as well as experimental/demonstration plots, assist in the establishment of farmer groups, are responsible for the certification of seed production and so on.

The most important knowledge sources for the Section are the university, public research, public authorities and the internet. The service cooperates with all kinds of actors (except NG research).

Records of advisory work are kept in the District Office; no rewards are foreseen beyond the officers' salaries (even their engagement in the training courses held in KEGE does not result in any kind of extra remuneration).

The Section prepares a strategic plan, known as the "Annual Extension Programme", including objectives to be pursued and targets to be accomplished based on the identification of local needs and the identified solutions. The programme/plan is designed by representatives of the Sections of the Dept. of Agriculture, District Offices and ARI. The progress achieved is checked and evaluated at local and district levels, as well as at the Section's headquarters through personnel follow-up, regular district meetings and detailed reports. Revision/adaptation of the programme is undertaken whenever needed.

The service employs all known 'traditional extension' methods, i.e. individual (personal and telephone contacts, including SMS), group (demonstrations, public talks, educational excursions, short training courses) and mass (TV and radio programmes, press articles/releases, leaflets and bulletins, posters, circular letters, etc.; a quarterly agricultural magazine of the Ministry known as *Countryman* is also published and circulated). Additionally, training courses for farmers are offered at the local training centres (KEGE).

The service's needs focus on the enhancement of cooperation and networking with knowledge and innovation sources (such as Universities and research centres) with the establishment of frequent exchanges of information between such organisations. In this respect, the safeguarding of funding in order for advisors to continuously update their knowledge and skills is another major concern.

It is further suggested that the establishment of an organisation/academy providing a pan-European certification for advisors and taking care of the ongoing (short courses/ lifelong learning) training of the staff of agricultural extension services would be beneficial; a network of agricultural extension advisors is in line with such a consideration. Closer cooperation and knowledge transfer of (at least, EU funded projects) research results, as well as of innovatory practices in other Member-States, is also deemed necessary. In this respect the establishment of a pan-European database including research results would be important (also in the sense of non-duplication of research efforts).

4. The Agricultural Advisory Service(s)

As already mentioned the Extension Section of the Dept. of Agriculture, Ministry of Agriculture, Natural Resources and Environment, is commonly accepted as being the main extension/advice provider in Cyprus. The Sections' headquarters are located in Nicosia and closely cooperate with 6 District Offices which are further subdivided into 30 smaller target-areas called "agricultural beats".

The Section currently employs 120 officers (42% are women); 63% of the staff concerns university graduates. The in-service training team of the Section takes care of the officers' training; thus around 80% of the staff are trained in a wide variety of topics, such as plant protection, animal nutrition, viticulture and oenology, plant production, and agricultural extension methodology. Additionally, many among the staff are certified for a number of topics, such as cross-compliance, agri-environmental measures, agrochemicals and plant protection, livestock production, soil and water uses, and horticulture and viticulture. Furthermore, the staff has a long history of working in extension (estimated average: 30 years). However, 28% have been recently recruited (i.e. have less than three years' experience) a fact which some of the interviewees took notice of, mainly due to the fact that such a big influx of new, inexperienced staff was not taken care of, in the sense that no effort for the transfer of experience from the retirees to the new staff was undertaken. Finally, it is a rather common ascertainment that since the country's accession into the EU (2004) the burden of the bureaucratic tasks pertaining to the CAP was shouldered by the Section thus restricting the advisory work of the service; fears that the situation may further deteriorate due to the current crisis were also expressed.

Currently, the Section's staff activities are divided between advisory work (50%) and other tasks (application of legislation deriving from Acquis: 30%; administration and management: 18% and R&D: 2%).

As far as advisory/extension work is concerned, it embraces advisory work (40%), management tasks (20%), information provision (20%), educational activities (10%) and staff's own improvement (10%).

The major method employed by the extension staff concerns individual (face-to-face) contact with farmers (60%): one-to-one on the farm contact accounts for 42% of all individual contact, one-to-one outside the farm for 42% and telephone helpdesk for 16%. Group extension accounts for 20% of extension work (on farm: 50% and outside the farm: 50%); finally, mass media accounts for the remaining 20% (website tools: 25%; and, publications, radio, TV: 75%)

In terms of the clientele of the service, it is worth noting that, in principle, all farmers are eligible to request for advice/information. However, large commercial farmers as well as producer groups with their own advisors are groups of rather minor importance for the service. The main target groups are thus medium and small commercial farms, young and part-time farmers.

It is important, in this respect, to note that although farmers, in general, in the first place address a private shop (depending on the trust they have to the agronomists working in the shop), they usually also ask for the opinion of extension officers given that the latter are impartial (not related to or paid by companies/ not-for-profit mode of operation of extension; extensionists may

also be more updated and are willing, in any case, to further search for a solution if for example a treatment fails – then they send samples to the Depts’ labs and so on).

The frequently delivered topics relate to plant (vegetables, grapes, potatoes, fruits) and animal (sheep and goats, pigs, poultry, cattle) production, rural development and cross-compliance. Of less importance (averagely delivered) are topics on diversification and environment. On the other hand, the topics demanded from almost all types of farmers concern all kinds of topics plant production, animal production, rural development, cross-compliance, environment and renewable energies. Additionally, small and young farmers (including female farmers) are interested in stable design, machinery and diversification.

Their knowledge and information needs embrace all the challenges brought forward by the new CAP (2014-2020) which fall within the responsibility of the Dept. of Agriculture.

Their main (very relevant) knowledge sources are the university, public research, public authorities and the internet. The Section cooperates with all kinds of actors (with the exception of NG research).

The main challenges for Cypriot agriculture are the very small farm size along with the fragmentation of such small farms and the drought climate (implying heavy irrigation needs). Furthermore, agricultural production suffers due to high production costs and thus in terms of competitiveness of products in the EU market; this is aggravated by the high transportation costs (of mostly perishable products which if not transported fast decrease in terms of quality) as well as the fact that marketing is the responsibility of another ministry (it is thus proposed that the marketing of agricultural products should be transferred to the Division of Agriculture as well as to re-establish campaigns which were terminated in 2004).

To stay competitive, the extension service, besides establishing closer cooperation with the rest of the actors, needs to continuously update staff’s knowledge and skills (re: training in Cyprus and abroad) especially with regard to diversification of production (new crops and varieties) and marketing.

As far as ARI is concerned, they are engaged mainly in applied research; they run experimental fields and are in touch with farmers (although less than they used to) and coordinate the Cypriot FADN/RICA. ARI is in close cooperation with the Extension Section (and, in general, the Dept. of Agriculture) and participate with researchers in the activities of Extension Section (public presentations, training in KEGE, etc.). They also present the results of their research in public; however as aforementioned most research is carried out through EU-funded projects which do not necessarily correspond to farmers’ needs.

Currently, ARI do not know if their research results are disseminated to farmers in a timely manner; if farmers adopt them; if they adopt them correctly; and under which (on-farm/real) conditions. To bridge this communication gap, ARI hopes to establish a direct two-way communication process with producer groups, consultants, the industry (input and processing) and farmers in order to avoid information distortion and involve farmers in research projects or get to know about farmers’ experiments. They are also willing to provide advice, if paid.

For ARI, the main problems to be addressed concern the quality, marketing, and competitiveness (imported are cheaper) of Cypriot produces as well as the low prices at the farm gate (vs. the

expensive final products offered to the consumer).

On their part, input shops (private companies) make a living from selling of inputs to farmers; advice per se is not paid for. Shops do not represent specific transnational input companies and transfer new knowledge related to their products to farmers.

Such shops (companies) are long standing in Cyprus (established in the 1960s and 1970s, with the oldest one, which was also interviewed, established in 1936).

Their goal is to increase the quantity and quality of production through the provision of the best possible inputs, advice and innovations. The provision of assistance to farmers and thus to the Cypriot agricultural economy as well as the protection of the reputation of the company are also mentioned.

These companies are, according to a number of the actors interviewed, quite important in terms of knowledge generation since they carry-out on-farm experiments and demonstrations (esp. on fertilization and plant protection). Therefore, one of the tasks of agronomists is to persuade progressive (large, innovative) farmers to try new innovations, on a small-scale in their farms (in which case, relevant inputs are offered to farmers for free). These companies also bringing specialists from abroad/transnational companies to give seminars, public presentations, etc.

The shops'/companies' owners are agronomists (university graduates) and employ agronomists (average 10, ranging from 3 to 15) as well as other staff (average company staff – including agronomists – 42 persons, ranging from 4 to 65). Women account for less than 10% of the extension staff.

Shops' agronomists do not have any additional certifications (none of the shops is involved in FAS) beyond their degree but most of the staff quite often receive additional training (for example, in technical/production issues³ as well as in topics, as mentioned by one company, such as sales, customer services, personal development and time management, depending on the company's size and orientation). Furthermore, agronomists often follow the public presentations of ARI on research results.

In each shop (company) agronomists with a wide range of working experience are found, especially in bigger companies where the change of younger staff is a usual practice (in their effort, as claimed, to find the most suitable ones).

The overall companies' staff working time is devoted to advisory and R&D (experimental farms) activities (at least 30% and 10%, respectively), administration and management (25% to 30%) and marketing-sales (10% to 30%).

As far as extension activities are concerned the agronomists' working time is allocated as follows: information (on average around one-third of the time, ranging from 15% to 50%), educational and advice (average around 15%, ranging from 10% to 20% each), own improvement (average 15%, ranging from 10% to 20%) and management (average 15%; in one case 20% for experiments and reports and in the second case 30%, but 0% in the third case).

³ For example, one of the companies cooperates with Israeli companies and sends its employee(s) for training in Israel once every two years.

The main method employed is individual contacts (from 75% to 95%); more specifically agronomists focus on on-farm face-to-face contact (average 75% of the time devoted to individual contacts, ranging from 60% to 95%) followed by outside farm contact (15%) and telephone calls (less than 10%). Group methods account on average for 16% of the extension time (almost evenly distributed between on-farm and outside farm activities) with mass being negligible (only one of the companies' advisors devotes 5% of his time as follows: internet 40%, website 40% and publications, radio & TV 20%). On average, each agronomist works with 75-100 farmers.

Agronomists work on weekly schedules of visits to villages and producers/clients; during these visits they sell inputs (so that the producer does not have to visit the shop). Meetings with farmers are also organised, a few times per year, at the company offices, hotels (sometimes also including dinners), etc. (re: company's marketing strategy to keep their clientele or attract new, mainly concerning larger farmers), which specialists of transnational input companies may also attend.

Their clients vary. One of the companies works with greenhouses and vegetables; thus their clients are small commercial farms (average size around 1.2 ha). The other two companies work with a variety of commercial farmers (average farm size between 3 and 5 ha and 10 ha, respectively); Young Farmers comprise a rather common target-group while the second company is also involved with farm employees.

Plant production is the most commonly delivered and requested advice. Additionally, one of the companies also delivers advice on animal production, with cross-compliance and diversification advice offered by two of the companies. Besides plant production (with emphasis on plant protection), only one of the companies mentioned that their clients ask for advice on rural development, cross-compliance, business diversification (including new crops and varieties) and the environment.

As far as the knowledge needs of advisors are concerned it seems that farm management and rural development are common topics. Diversification, water management, and renewable energies are also included.

The most relevant knowledge source, as expected, is private (input) companies followed by private consultancies. In parallel, though, university and public research are included in the most relevant sources by two out of the three companies. The cooperation of two of the companies is quite diversified including, besides private (input) companies and private consultancies, public research and public authorities.

The shops (companies) keep records for their agronomists but only one has an incentive programme. The companies' strategic plan is designed by the owner, mostly in cooperation with the agronomists.

The level of understanding of the major challenges varies between companies. These challenges concern the increased transport costs of the agricultural products to the EU as well as the downgrading of their quality (perishable produces); the ageing farming population and thus the lack of entrepreneurial spirit and the difficulty to introduce innovations; and, the further

specialisation of production. One company representative also stressed the need for agronomists to cooperate with farmers, especially when carrying out collaborative on-farm experiments.

As far as the companies' own needs are concerned, the continuous updating of their (mainly technical) knowledge and information (and the introduction of innovations) is a common concern.

Local consultants are agronomists or groups of agronomists (university graduates with further training and certifications, including FAS (all) and GLOBAL G.A.P.). Their professional experience varies: two out of the four consultancy companies have been established by retired public (Dept. of Agriculture) and private companies' staff and employ 10 agronomists (with one employing only retired agronomists), while the third one employs 7 young university graduates (experience less than three years) but cooperates with 6 more experienced (external) agronomists and the fourth one (Development Agency - DA⁴) employs only one agronomist (experience: 9 years).

The consultancy companies' income comes from the fees paid by farmers or farmers' groups per package of advice or per application prepared, relating to EU programmes (Young Farmers, modernization schemes, etc.). Their espoused goal is to assist farmers through the provision of technical advice and advice on running programmes as well as to prepare their applications.

Overall these companies employ 35 people (13 women). Out of them 19 are agronomists; the companies additionally employ 14 external agronomists. The staff's working time is roughly divided between advisory, and administration and management work; nevertheless, in one case the running of experimental farms takes around 10% of the working time and yet in another the seeking of information takes almost one-third of the working time.

As far as their extension work is concerned this is allocated as follows: advisory services (47%), educational activities (17%), information (15%) and management (17%) with the remaining time (ca. 4%) devoted to their own improvement.

The main method employed by all advisors is individual contacts with farmers (on average 72% distributed as follows: 30.5% on the farm, 49% outside the farm and 20.5% help-desk. This is followed by group work (average 20%) but it is only two of the companies that are involved with group work (average between the two companies 40%, of which 95% outside the farm). The mass media (average 7.5%) are used by only one of the companies (accounting for 30% distributed as follows: 50% SMS, 40% magazines, 10% internet).

The numbers of clients varies considerably: one of the consultancy companies does not have a steady pool of clients (and thus its target is mostly on working as a consultant or partner in EU projects) while the clients range between 150 and 1,400 (in the latter, biggest case, the 800 members of a producer group are included). The number of clients per advisor also ranges from 50 up to 150. The average size of the farms served is, for one of the companies, as high as 2 ha; for the farmers cooperating with the second company, for citrus the average is 1.5-2 ha, for

⁴ Development Agencies (DA) are autonomous bodies, directed by shareholders (comprising local authorities and collectivities as well as private actors) and funded through projects (LEADER, LIFE, etc.), local authorities (for putting together development plans and implementing projects undertaken on their behalf) and, in case they provide specific advisory services to farmers, fees per advisory package.

vegetables 1 – 1.2 ha and for potatoes 6 ha; the DA works with animal breeders (range: 50-150 heads). The target groups also differ: for the first of the companies it is small commercial, semi-subsistence and part-time farmers; for the second one it is medium commercial and semi-subsistence farmers as well as producer groups; for the DA it is Young Farmers.

Therefore, the advice delivered is mainly on plant and animal production as well as cross-compliance (re: all target groups). Rural development, diversification and the environment follow; topics such as machinery and renewable energies are minor topics. In general the advice delivered depends on the programmes that farmers are involved with.

On the other hand, the advice requested (by all groups of farmers) mainly concerns plant (plant protection, fertilization, new varieties) and animal production (esp. milking machines and stable design on the part of larger farmers) and cross-compliance; machinery was also mentioned by one consultancy company. Bookkeeping is an important topic only for the farmers-clients of one of the companies; rural development is, according to the DA, a topic for large and medium as well as Young Farmers; diversification (processing and quality-safety standards and certification) is important for the producer group that one of the companies is working with.

Advisors claim that they need to be informed and trained on a variety of topics to meet the challenges of the new CAP (with diversification and renewable energies being indicated by all; all the topics were indicated by two of the advisors – with the exception of agricultural accounting on the part of one of them). Their main sources of information include the public authorities (re: Regulations and programmes as well as seminars organised by the Dept. of Agriculture/ Extension Section) and private companies (consultancies and input/processing companies); public research and the internet were also mentioned as important sources by two out of the four companies. One of the companies keeps its own library.

The consultancy companies cooperate with a variety of other actors. Public authorities and public research hold a prominent position. Private inputs and processing companies are also referred to along with universities and the internet, with the DA also taking notice of collectives (rural womens club) activated in its target area.

All consultancy companies keep records of advisor's work (esp. farm performance evaluation). Only one of the consultancy companies has an incentive programme rewarding performance.

All companies have strategic plans carried out by the management.

The main challenges concern the improvement of the quality of agricultural products (re: market demand) and safeguarding farmers' income (since as income decreases the more likely it is for farmers not to be able to pay for advice as well as to abandon farming). The need for farmers to be better trained was also put forward.

As far as the companies' own needs are concerned, being in contact with farmers, their own continuous updating of knowledge and the cooperation between actors such as the state, farmers, and consultants, are acknowledged as important. The need for qualified staff was also mentioned by one of the consultancy companies.

Furthermore, advisors-agronomists are employed by producer groups and (processing & marketing) cooperatives. They were established after 2004. They employ a number of

agronomists (permanent staff – on average 2-3 agronomists – with or without external assistance/agronomists). Depending on the group's business plan, i.e. on whether agronomists' salary is included in the business plan (co-financed by the EU and the group), advisors either charge farmer-members with a standard fee for advice or provide advice for free. Their professional experience roughly equals the number of year these groups have been operational (average 7 years) and their goal is to enhance products' quality and safety (from cultivation to their marketing), thus including cultivation techniques, quality standards (integrated production systems, etc.) and, where relevant, packaging and marketing.

Overall, the staff of these groups is largely occupied with administration and management (on average: 50%), followed by advisory topics (35-40%). The rest of the working time is devoted, where relevant, to the maintenance of packaging units and/or marketing.

As far as extension activities are concerned, educational activities occupy (on average) around 23%, information around 32%, advisory around 22% and own improvement around 13%. The rest (ca. 10%) is devoted to managerial tasks.

Individuals methods predominate (average: 80%) as follows: on-farm 47%, outside farm 27% and telephone 24%. Group methods account for 20% (outside the farm 97%).

Their clientele equals the members of the group/coop. for two of these organisations the average members' farm size is estimated to 1 ha (vegetable and citrus producers) while for the third one is 3.5 ha (potato producers). Commercial farmers are the main target group of these groups/coops with two of them arguing that it is the large and medium farms that comprise their major target groups; nevertheless two of the organisations also claim that semi-subsistence farmers are among their main target-groups.

The topics delivered to farmers mainly concern plant production (plant protection, fertilization) and cross-compliance followed by diversification (re: introduction of new cultivations – for example, pomegranate and snail farming). On their part farmers-members request information/advice on plant production and cross compliance.

The advisors' knowledge needs are quite diversified depending on their background and the organization they work with⁵. As far as their main knowledge sources are concerned, public authorities predominate followed by public research and private companies (input and/or processing). The university and the internet are also mentioned as (very relevant to) relevant sources by two out of the three organisations.

The groups mainly cooperate with the public authorities. Other actors that are referred to are the university (by one of the groups as they cooperate on a project), public research and private (input) companies (by two of the organisations each).

Only one of these groups keeps records of advisory work (timesheets). The management, Boards, hold responsibility for putting together their strategic plans. The groups are not involved with FAS (although some of their agronomists are certified for FAS).

⁵ The following knowledge needs were recorded: biodiversity only; business diversification, agricultural accounting and farm management; farm management, climate change, biodiversity and water management.

The major challenges for them relate to the ever increasing production costs (increasing prices for fertilizers and pesticides, along with unnecessary investments on machinery by quite some farmers) and marketing. The lessening of the EU Regulations to take account of the peculiarities of the Cypriot agriculture was also put forward by one group's representative.

Finally, needs for them to stay competitive revolve around the development of entrepreneurial spirit in the groups (esp. as far as their management sections are concerned) and the introduction of innovations (including updates/access to information on both scientific and policy topics by both agronomists and farmers).

5. Characteristics of Farm Advisory System

In Cyprus FAS was only marginally implemented. This owes to the fact that the Ministry had already set up the Cross-compliance Service (coordinated by the Dept. of Agriculture in which all relevant Depts of the Ministry sit in) and through the Extension Section (in cooperation with the other Depts) had already made the necessary information campaign, at least as far as cross-compliance is concerned (see, http://www.moa.gov.cy/moa/crosscompliance/crosscompl.nsf/dmlindex_gr/dmlindex_gr?OpenDocument). Therefore, the Implementation of Measure 114 was taken rather as an opportunity to set up a mixed system vis-à-vis the EU Regulation (not as an absolutely necessary for the improvement of the Cypriot agriculture action).

All the necessary actions for the establishment of the system were thus undertaken. The Dept. of Agriculture/Extension Section chose to implement only Measure 114 through private bodies of mixed status (profit/non-profit) with mixed cost for farmers (i.e. support to the farmers is limited to 80% of the eligible cost per advisory service, up to a maximum amount of €1500). The number of (on-farm) visits per year per farmer were defined to five for obligatory actions (cross-compliance and safety) and to eight for optional/supplementary actions (i.e. bookkeeping, organic farming, integrated production, management of livestock, greenhouse or forestry farms).

Open calls for consultants and farmers were publicized. As far as consultancy companies are concerned, a number of prerequisites apply: they should cover the whole country, have appropriate staffing (at least, a permanent, experienced agronomist and official contracts with at least one economist, one veterinarian and one forester) and infrastructure, as well as not being public entities or involved in the marketing of inputs (shops).

Furthermore in order to be certified FAS advisors were obliged to follow specific training related to the objectives of FAS and relevant policies. The training was organised by the Extension Section and took place twice (2009 and 2010). Its duration was two days and afterwards trainees sat in an examination and if successful the trainees were certified in FAS. The objective was to prepare a pool of certified scientists who might be employed by one of the companies who might apply as consultants within FAS. Overall, 120 people were trained, and out of these 72 were certified. In parallel, in 2007 and 2010, 139 staff members of the Ministry were also trained.

Farmers put together their applications in March-July 2011. Overall, 128 applications were received out of which 84 were eligible. Overall, 4 consultancy companies (vs. 6 foreseen) and 84 farmers participated in FAS (vs. 1200-1300 foreseen; it was estimated that only relatively larger farmers would be in a position and willing to pay for their own contribution). Out of the four consultancy companies, only two were active (i.e. signed 41 and 43 FAS contracts with farmers, respectively).

The main problems identified during the implementation of FAS in Cyprus, on the part of consultants, relate to the lack of cooperation between the consultancy companies, bureaucracy - which obliged consultants to spend most of their time in filling the necessary forms on behalf of the farmers (otherwise farmers would opt out), the small size of Cypriot farms and

the small amount of eligible costs allowed. The task to attract farmers was a tedious one – as mentioned, consultants had to spend their afternoons in the local cafes in order to attract clients. The need to change the funding procedure (80% of the eligible costs paid to the farmer who then had to pay the full cost to the consultant) was also underlined. Furthermore, one of the consultants suggested that consultants' certification has to become stricter.

On the part of the Dept., acknowledging more or less the aforementioned problems, the need for FAS to become more flexible, to cater for the specificities of smaller Member-States, as well as the high administration costs to serve small farms are underlined.

In most aspects Cyprus followed, in general, the practice followed by the majority of the EU MS. Thus far, no relevant research or evaluation has been carried out.

6. Summary and conclusions

In Cyprus, the AKIS comprises of the Agricultural Division of the Ministry of Agriculture, Natural Resources & Environment (mainly the Department of Agriculture, with emphasis on its Extension Section, and ARI (the Agricultural Research Institute), the newly established Cyprus University of Technology, private consultants and private (input) shops, cooperatives (dealing with the processing and marketing of produces) and producers groups and, of course, individual farmers.

In terms of knowledge generation ARI, through its applied research, predominates given that the university has only recently started to play some role; neither institute has mechanisms to disseminate knowledge to farmers. An important fact (confirmed by both ARI and the University) is that (very few) farmers have recently started to ask for specialized information and fund small-scale projects (mainly product analysis).

New knowledge and technology is also imported or generated (experimental plots) by private agronomists' companies (input shops). In terms of knowledge dissemination the Extension service (comprising the Extension Section, the District Offices and 'beat' extension workers) predominates. Private companies' agronomists as well as producer groups' and cooperatives' agronomists (esp. of the ones applying quality systems) also contribute to the transfer of knowledge and technology to farmers. Finally, farmer-to-farmer dissemination plays an important role in a small country such as Cyprus.

Despite the fact that there is not any specific policy framework or formal agreements between the AKIS actors, the Extension Service covers, as a coordination mechanism, more or less, actors' bonding needs. The service is, for example, in contact with producer groups and coops, (through District Offices) as well as with individual farmers through District Offices and beats extension officers; therefore, a two-way communication mechanism between the Extension Section and farmers has, despite shortcomings, been long since established and still working. Important in this respect is the knowledge produced by innovative farmers who produce adapted knowledge (esp. on new crops, such as stevia and hippophaes, or new varieties) since they inform or ask for advice from the District Offices which, in turn inform (or ask for help from) the Extension Section and, generally, the Division of Agriculture.

Furthermore, the Extension Section cooperates with ARI in putting together its annual extension programmes (which the Section monitors) as well as in defining research needs. On the other hand, ARI staff actively participates in the service's educational activities and tries (although without a relevant section/staff or funds) to grasp farmers' problems.

Especially as far as FAS is concerned, the set-up of the Cross-compliance Service downgraded its implementation to a marginal action – rather as an experiment vis-à-vis the establishment of a mixed system in the country.

Missing links may be identified between private (input) companies and the extension service as well as between consultants and the service (i.e. beyond legal matters). Nevertheless, informal links (occasionally) exist at the district and local levels.

Given the fact that a) the Extension Service, as a result of both the country's accession into the EU (2004), has increasingly undertaken bureaucratic tasks (currently further aggravated by the obligations imposed by the Troika), b) the decreasing interaction of ARI with farmers, and c) both ARI and the Cyprus University of Technology are largely dependent on participation in EU-funded projects which nevertheless do not, more or less, correspond to the needs of the Cypriot agriculture, while at the same time d) are both largely oriented towards publications in scientific journals, the need for more intensive cooperation between all the actors concerned (with the lead of the Dept. of Agriculture/ Extension Section) underlined by all the actors who participated in PRO-AKIS research in Cyprus is not surprising.

Concerns are also expressed about the adequate staffing of the Section, and more generally of the Dept. of Agriculture, which along with the pressure for the restructuring (downsizing) of the public sector by the Troika, may result in the downgrading of extension/advisory work in Cyprus; privatisation does not seem to be a viable option for Cyprus due to the extremely small scale farming (and other structural characteristics of the sector) in the country. The updating of extension officers knowledge (including extension methodology) has also been put forward; the same is, more or less, true for all agronomists notwithstanding their employment status (public or private).

Despite interesting proposals such as: a) the establishment of a network of experimental plots (collaborative experiments) all over the countryside in order, on the one hand, to generate, adapt and disseminate (through farmer-to-farmer extension processes as well) innovations and, on the other hand, to focus more on farmers' needs and b) the enhancement of farmers' occupational training (with emphasis on experiential learning), farmers have, on their part, to become more entrepreneurial as well as more open and willing to share their know-how with their colleagues; farmers' unwillingness to pay for advice (since currently they do not) may be a further obstacle insofar as private services will become an important source of advice.

7. Methodological reflections and acknowledgements

The Extension Section's staff cooperation is acknowledged and highly appreciated. The staff not only provided all necessary information and documents but, additionally, were ready to immediately respond to queries and be in continuous contact (via skype, emails and telephone calls) with the research team; furthermore, they facilitated the research team with the identification of stakeholders and organised contacts with them (re: interviews and questionnaires).

8. References

- Andrew, P. (1975) An appraisal of the economic, social, cultural and political factors that led to the successful operation of the co-operative marketing societies in Cyprus. *Farm Economist*, 4(2): 164-174.
- Andrew, P. (1976a) An empirical investigation into the main factors that led to successful operation of the co-operative marketing societies in Cyprus. *Agricultural Administration*, 3(1): 33-44.
- Andrew, P. (1976b) Rural development through agricultural marketing co-operatives: An empirical study of vegetable marketing co-operatives in Cyprus. *Agricultural Administration*, 3(3): 193-201.
- Aristides A.I. (1995) Project for the encouragement of youth to stay in rural areas. *Cahiers Options Méditerranéennes*, 2 (2): 21-23.
- CerOrganic www.cerorganic.eu
- Charalambous-Snow. E. (2010) Increasing communication effectiveness and efficiency between the Department of Agriculture and the Cypriot farmers they serve. PhD Dissertation in Agricultural and Extension Education, The Pennsylvania State University.
- Charalambous-Snow, E. and Ingram, P. (2011) Increasing Communication Effectiveness and Efficiency between the Department of Agriculture and The Cypriot Farmers They Serve. *Journal of International Agricultural & Extension*, 18(1), DOI: 10.5191/jiaee.2011.1810.
- Cornish, G.A. (1998) Pressurised irrigation technologies for smallholders in developing countries – a review. *Irrigation and Drainage Systems*, 12: 185–201.
- Economides, S. (1997) Cyprus country paper. In: Thomson, E.F., von Kaufmann, R., Li Pun, H., Treacher, T. and van Houten, H. (eds.) *Proceedings of a Consultation on Setting Livestock Research Priorities in West Asia and North Africa (WANA) Region*. ICARDA, Aleppo, Syria, 12–16 November 1997.
- Markou, M. and Stavri, G. (2005) Market and Trade Policies for Mediterranean Agriculture (MEDFROL): The case of fruit/vegetable and olive oil. Report for the project ‘Policy-oriented research Integrating and Strengthening the European Research Area’ (FP6-2002-SSP-1).
- Markou, M. and Kavazis, A. (2006) Agricultural Situation Report of Cyprus and the Market and Trade Policies for Fruit/Vegetable and Olive Oil. In: *Marketing Dynamics within the Global Trading System: New Perspectives* (98th EAAE Seminar), Chania, Crete, Greece, 29 June – 2 July 2006.
- Morphakis, K. (1999) Organisation of extension services. National case studies: Cyprus. *Options Méditerranéennes*, Serie A: Séminaires Méditerranéennes, 38: 79-82.
- Neocleous G. (1995) Agricultural extension in Cyprus. *Cahiers Options Méditerranéennes*, 2(2): 5-32.

Papachristoforou C. and Tzamaloukas, O. (2012) Innovations have improved the efficiency of ruminant production systems in Cyprus. In: *New trends for innovation in the Mediterranean animal production*. EAAP – European Federation of Animal Science, Volume 129, pp 217-226

Phocaides, A. (2002) Irrigation advisory services in Cyprus. In: *Irrigation Advisory Services and Participatory Extension in Irrigation Management*. Workshop organised by FAO – ICID, 24 July 2002, Montreal, Canada.

Socratous, G. (2011) Integrated Water Resources Planning in Cyprus. In: Koundouri, P. (ed.), *Water Resources Allocation: Policy and Socioeconomic Issues in Cyprus* (Global Issues in Water Policy 1). Springer Science & Business Media B.V.: pp. 111-124.

Van Tuijl, W. (1993) *Improving Water Use in Agriculture, Experiences in the Middle East and North Africa*. World Bank Technical Paper No 201. World Bank, Washington DC.

World Bank (1985) Agricultural research and extension project: staff appraisal report. (Report 5361-CY). World Bank, Washington DC.

9. Appendices

9.1 List and contact of organisations forming AKIS

Name of organisation (in English)	Address	Website	Status (public/R&E/private/FBO/NGO)*
Extension Section, Dept. of Agriculture, Agriculture Division, Ministry of Agriculture, Natural Resources and Environment	Louki Akrita, 1411, Nicosia	http://www.moa.gov.cy	Public
Agricultural Research Institute	PO BOX 22016, 1516 Nicosia	www.ari.gov.cy	Public (research institute)
Cyprus University of Technology	30 Archbishop Kuprianou Str., 3036 Lemesos	www.cut.ac.cy	University
Agroforum	23 Rigainis Str 23, Plati Aglantzias, 2114 Nicosia	www.ag-forum.com	Private (inputs)
Georgiko Epimelitirio of Cyprus	6 Medontos Str, PO Box 22644, 1523 Nicosia	nicoskouz@yahoo.com	Private consultancies
QUALITYCERT LTD	18 Ag. Triados Str, PO Box 42483, 6534 Larnaca, Cyprus	qualitycert@cytanet.com.cy	Private consultancies
DA of Larnaca	2B Ag. Lazarou Str. 7040 Boroklini	http://www.anetel.com/	Mixed (public and private consultancies)
DA of Troodos	139 Arxiepiskopou Makariou C Str, Galata, 2827 Nicosia	nava_gos@hotmail.com	Mixed (public and private consultancies)
CYPROFRESH – CITRUS	P.O. BOX: 51277, Limassol	http://www.sedigep.com.cy	Farm-Based Organisation
SEDIGEP Coop	25 th of March Ave., 7020 Dromolaxia, Larnaca	sedlysis@cytanet.com.cy	Farm-based Organisation
Pancyprian Potato Growers Group - POP	53 Griva Digeni Str, Megaro Karagiorgi, 6036 Larnaca	www.cypruspotato.com	Farm-based Organisation
Premier Shukuroglou Cyprus Ltd	P.O. Box 12508, 2250-Latsia	www.premier.com.cy	Private (inputs)
Chemicals LTD	PO BOX 21278, 1505 Nicosia	chemicals@staurinidis.com.cy	Private (inputs)
Lamprou Agro LTD	PO BOX 24839, 1304 Nicosia	http://www.lambrouagro.com.cy/lambrou	Private (inputs)

* confer table 2 (page 7), first column

9.2 List of interviewed experts

Extension Section, Dept. of Agriculture, Agriculture Division, Ministry of Agriculture, Natural Resources and Environment:

Efi Charalambous – Snow (tel: +357 22408667; email: echaralambous@da.moa.gov.cy)

Marios Adamides (tel: +357 22408644; email: madamides@da.moa.gov.cy)

Periklis Athanasiou (tel: +357 22408665; email: pathanasiou@da.moa.gov.cy)

Evi Thrasivoulou (email: ethrasivoulou@da.moa.gov.cy)

Artemis Antoniadis (email: mantoniades@da.moa.gov.cy)

Agricultural Research Institute (Marios Adamidis & Andreas Stylianou)

PO BOX 22016, 1516 Nicosia

tel: +357 224003116, fax: +357 22316770

email: adamides@arinet.ari.gov.cy; a.stylianou@arinet.ari.gov.cy

Cyprus University of Technology (Dimitrios Tsaltas)

30 Archbishop Kuprianou Str., 3036 Lemesos

tel: +357 25002545

dimitris.tsaltas@cut.ac.cy, www.cut.ac.cy

Questionnaire addressees

Agroforum (Grigoriou Kostas)

23 Rigainis Str 23, Plati Aglantzias, 2114 Nicosia

tel: +357 99618992, fax: +357 22333480

agroforum@cytanet.com.cy, www.ag-forum.com

Georgiko Epimelitirio of Cyprus

6 Medontos Str, PO Box 22644, 1523 Nicosia,

tel: +357 22769976

nicoskouz@yahoo.com

QUALITYCERT LTD (Patsalos Kuriakos)

18 Ag. Triados Str, PO Box 42483, 6534 Larnaca, Cyprus

tel: +357 25716866, mobile: +357 99695170, fax: +357 25399403

qualitycert@cytanet.com.cy

DA of Larnaca (Antonis Nikolaou)

2B Ag. Lazarou Str. 7040 Boroklini

tel: +357 24 815280, fax: +357 24 636817

info@anetel.com, anetel@cytanet.com.cy, <http://www.anetel.com/>

DA of Troodos (Konstantinos Xazitkostas)

139 Arxiepiskopou Makariou C Str, Galata, 2827 Nicosia

tel: +357 22952043 fax: +357 22952045, mobile: +357 99350754

mail: nava_gos@hotmail.com

CYPROFRESH – CITRUS (Makarios Maratheutis)

P.O. BOX: 51277, Limassol
tel: 357-25873900 357-99604614 Fax: 357-25713340
e-Mail: a.dionisiou@sedigep.com.cy Web Site: <http://www.sedigep.com.cy>

SEDIGEP Coop (Antonios Mantis)
25th of March Ave., 7020 Dromolaxia, Larnaca
tel: +357 24422970, fax: +357 24425215
mail: sedlysis@cytanet.com.cy

Pancyprian Potato Growers Group - POP (Charalampos Anastasiou)
53 Griva Digeni Str, Megaro Karagiorgi, 6036 Larnaca
tel: +357 24665114, fax: +357 24665124, mobile: +357 99665920
pambos@cypruspotato.com, www.cypruspotato.com

Premier Shukuroglou Cyprus Ltd (Nikolaos Larcos)
P.O. Box 12508, 2250-Latsia
tel: +357 22815353 ext 132, fax: +357 22482331, mobile: +357 96380056
n.larcos@premier.com.cy, www.premier.com.cy

Chemicals LTD (Spiros Staurinidis)
PO BOX 21278, 1505 Nicosia
tel: +357 22447464
chemicals@staurinidis.com.cy

Lamprou Agro LTD (John Ioannou)
PO BOX 24839, 1304 Nicosia
tel: +357 22667908, fax: +357 22667157, mobile: +357 99444372
lazo@spidernet.com.cy, <http://www.lambrouagro.com.cy/lambrou>

9.3 Literature review summary

Most of the published papers refer, rather indirectly, to the positive role of the Extension Service in Cyprus. Examples include papers addressing agricultural marketing cooperatives (Andrew 1975, 1976a and b) in which the positive role of extension in relation to the improvements of quality of produces for the market as well papers addressing the issue of irrigation (a major problem in the country) and land consolidation (Van Tuijl, 1993; Cornish, 1998; Phocaides, 2002; Markou and Stavri, 2005; Socratous, 2011), ruminant production (Morphakis, 1999 and, focusing on artificial insemination, Papachristoforou and Tzamaloukas, 2012) and the Young Framers programme (Aristides, 1995). Descriptions of the structure and functions of the Extension Section of the Department of Agriculture are found in World Bank (1985), Neocleous (1995), Morphakis (1999), Charalambous-Snow (2010) and Charalambous-Snow and Ingram (2011). Identification of constraints is included in World Bank (1985), Neocleous (1995), Morfakis (1999), Markou and Stavri (2005), Charalambous-Snow (2010) and Charalambous-Snow and Ingram (2011) as well as in Phocaides (2002) in relation to irrigation and CerOrganic (undated) in relation to organic farming. Constraints include the increasing time allocated by the service to regulatory work, the inadequate numbers of extension workers (esp. in animal breeding), the targeting of the increasing numbers of part-time farmers and women, the bridging of the gap of trust and confidence farmers indicate, the training (knowledge and skills, including communication methods, ICTs, marketing, producer groups) and motivation of the extension staff, the marketing of the section's own activities (including communication activities) and the general awareness of the service on new developments (including cooperation with various services and private actors, the Agricultural Research Institute and the newly established University of Technology; and, updating knowledge on extension systems per se with an emphasis on participatory and demand-driven extension).