

SIXTH FRAMEWORK PROGRAMME
PRIORITY: Area 8.1 Policy related research
PRIORITY TITLE: *Tools and assessment methods for sustainable agriculture and forestry management (Task 3)*



SPECIFIC SUPPORT ACTION

DIVTOB:
**Diversification for Tobacco Growing Regions
in the Southern European Union**

Project No.: SSPE-CT-2006-022739

**Final Project Results
Summary**

Period covered: from May 1, 2006 to April 30, 2008

Date of preparation: July 17, 2008

Start date of project: May 1, 2006

Duration: 21 months

Coordinator: Prof. Dr. Thomas Jungbluth

Organisation Name: Universität Hohenheim

1. Background

The EU has been supporting tobacco cultivation since 1970 through a Common Market Organisation (CMO) with an annual budget of some 1 000 million Euro. The market has been substantially reformed, first in 1992, then again in 1998 and, most recently, in 2004. The total value of the tobacco crop in 2000, meaning the total amount paid to the farmers by the processors, was 269 million €. The total amount paid to the farmers in premiums was 953 million €. Put simply, a crop worth 269 million € cost European taxpayers 953 million € to grow.

The Commission's response at the time was to strengthen its commitment to finding a sustainable policy-approach for the tobacco regime, based on an assessment of the economic, social and environmental aspects of the sector. Thus, in May 2002, in its Legislative and Work Programme for 2003, the Commission decided to subject its policy reflections on the tobacco sector to an Extended Impact Assessment¹, in accordance with its 'Sustainable and inclusive economy priority'.

The Commission's principal conclusion, from the Extended Impact Assessment for the tobacco sector, was that a step-wise decoupling of the existing tobacco premium, accompanied by a phasing out of the Tobacco Fund and the setting up, within the second pillar of the CAP, of a financial envelope for restructuring tobacco producing areas, would provide the most sustainable policy for the tobacco sector in the future. This option was found to balance adequately the need to break the link between supporting individual producer incomes and the growing of tobacco, while providing funding for a re-orientation of the sector towards alternative sources of income.

The reform adopted by the Council in April 2004 envisages phased decoupling of the aid from production. Future support for tobacco producers will be included in the single farm payment scheme. There will also be a specific financial envelope for the restructuring of tobacco-producing areas.

The need of a scientific support in the search for sustainable alternatives for tobacco growers was addressed by the Commission and has been taken up in the 6th Framework programme in a specific call in the Area 8.1 Policy related research, *under 1.2 Tools and assessment methods for sustainable agriculture and forestry management* (Task 3). The DIVTOB Project is referring to that call.

The overall aim of the DIVTOB project is to solve a problem of livelihood for EU tobacco farmers, mainly for the family farms (66.510 affected farms of 69.510 tobacco holdings in EU-15). This shall be done by providing scientific support for the implementation of diversification alternatives for the tobacco crop. This shall be done in developing a toolbox where those sustainable alternatives, which would provide employment as well as income, are identified and characterised that could be undertaken in the 'difficult' tobacco producing areas. A list of such alternatives shall be set up which are the most suitable opportunities for the regions concerned. The tool shall be used, among others, by national and European relevant administrations and policy-makers. When starting the project in May 1, 2006 the major EU producers of raw tobacco are Italy, Greece and Spain, which together account for 87% of total production.

2. Objectives of the DIVTOB Project

- For the Tobacco Farmers in Greece, Italy, Portugal and Spain to provide a basis that they can make their decisions for their future.
- To quantify in terms of hectares, working hours and income the magnitude of necessary diversification efforts in order to give a sustainable future to the Tobacco farmers.

3. Actual Socio-Economic situation of the Tobacco farmers in the DIVTOB sample

- 96% are family farms
- 95% of the farms have a size < 15 ha
- Typical Tobacco cultivation area for family farms is 0,5 ha to 3,0 ha
- Tobacco pays the family farms
- ~ 35% of the Tobacco farmers are women

Major Challenge:

The socio-economic dimension of the Tobacco Reform on the affected family farms is very difficult to overcome and needs an innovative approach

4. What are the real alternatives for the Tobacco farmers

- (Additional) economic activities off farm ?
- Aromatic and Medical Plants ?
- Energy plants and Renewable Energy ?
- Rural Tourism ?
- Aquaculture ?
- Horticulture and Fruit Production ?
- New crops ?
- Or to continue to grow Tobacco in Regions with good market quality ?

4.1 Less appropriate diversification alternatives

Activities off-farm are mostly not available in most of the Tobacco growing regions. Energy crops give neither sufficient income for small farms nor can maintain the jobs. Aromatic and Medical plants can be a solution in some very specific regions to a limited number of farms. The plant Artemisia can be a possible alternative in Campania for about 2000 hectares. However, the whole region of Campania has 10.541 Farms with 13.029 hectares. This means Artemisia can be a solution for about 15% of the Campania Tobacco cultivation area. Other examples in table 17 will result as a solution for a much lower number of farmers. Aquaculture has the possibility to increase a lot the farm income and probably also the number of jobs. But it is an alternative too far away from the experience of the vast number of Tobacco farmers. Rural Tourism will be a very individual solution as it is in most of the concerned regions already exploited.

Diversification Aspects	Observations	Concerned Regions or Farm Type
Activities off-Farm	<ul style="list-style-type: none"> • Most of the Tobacco Regions have a high Long-Term Unemployment Rate within the active population 	Examples: <ul style="list-style-type: none"> • Makedonia up to 12% • Campania 9%
Energy Crops	<ul style="list-style-type: none"> • High loss of farm income • Complete loss of employment 	<ul style="list-style-type: none"> • Only Farms > 100 ha • 5 Farms in the DIVTOB Sample
Aromatic and Medical Plants	<ul style="list-style-type: none"> • The market analysis by the DIVTOB Project shows no market potential in general • Only local importance 	<ul style="list-style-type: none"> • Examples that might work: • Arthemsia in Campania • Thyme, Basil, Greek Mountain Tee in Ellassona
Aquaculture	<ul style="list-style-type: none"> • Too far away from the experience of the Tobacco farmers • Only as individual solution 	<ul style="list-style-type: none"> • Appropriate also for small farms < 5 ha • Can create new jobs in on-farm processing
Permanent Tree Crops	Only as an additional activity	<ul style="list-style-type: none"> • Loss in income • Temporal employment lost
Rural Tourism	No alternative at all	In most regions already exploited

4.2 Better suited alternatives for Tobacco cultivation

For some regions traditional animal products may be a good solution e.g. in Campania the famous Mozzarella from buffalo, or live stock farming of some special meat races (e.g. like in Chieti or Umbria). Also sheep and goat farming can be a solution for some Greek regions with on-farm meat processing or cheese making. Granivorous livestock farming may give high farm incomes. However, the huge number of farms which may choose this diversification alternative can result in a severe market imbalance affecting all farms in that sector. According to the DIVTOB sample there are in Greece, Italy, Portugal and Spain a total of 686 farms which may choose that alternative. Sector analysis, if required, should be done on a national level. Arable crops are the “ultima ratio” for the big farms. They survive at much lower farm income than Tobacco cultivation. The temporal employment is completely lost. The vast majority of small Tobacco farmers must choose an alternative which gives high income per agriculture area.

Diversification Aspects	Constraints	Effect on Income and Employment
Small Tobacco Farms < 15 ha	<ul style="list-style-type: none"> • Need high added value crops (e.g. Stevia) • Production systems with high investment costs (Hydroponics, Green house production, aquaculture) • Organic field vegetable production 	<ul style="list-style-type: none"> • Will maintain or even improve farm income • Temporal employment may maintained • Could create new jobs in manipulating, packing or processing at Producer organisation level
Granivorous livestock farming	<ul style="list-style-type: none"> • Needs a sector analysis whether new producers will not provoke heavy market disorders • High investment costs 	<ul style="list-style-type: none"> • Could result in a strong increase in farm income • Employment level strong reduced.
Arable crops	“Ultima ratio” for the Tobacco farms > 25 ha	<ul style="list-style-type: none"> • Heavy loss in income • Temporal employment lost
Herbivorous livestock farming (where appropriate)	<ul style="list-style-type: none"> • Could promote traditional products (e.g. Mozzarella from Buffalo) or special ruminant meat races (e.g in Chieti) • Sheep and goat meat and cheese in some Greek regions 	<ul style="list-style-type: none"> • Could maintain income • Temporal employment lost • Could create new jobs by on-farm processing (e.g. Cheese making, meat processing)
Tobacco farms > 25 ha	<ul style="list-style-type: none"> • May implement all possible diversification alternatives • To avoid income losses high investments are necessary 	<ul style="list-style-type: none"> • May maintain income due to strong investments in the farms • Effect on employment depends on implemented alternative

4.3 The magnitude of diversification needs

In most product markets (like meat or vegetables) a sudden increase of additional suppliers will result in a heavy market distortion which will affect all farmers in a specific area. Most of the Tobacco farms must choice for intense production like horticulture which will result exactly in market unbalances.

Farm Type	FADN Results 2004 for Italy			Tobacco Farm Size Class	Number of Tobacco Farms according to Farm Type Size *				Total
	Average Size (ha)	Income € (2004)	Farm Workforce**		Italy	Greece	Spain	Portugal	
Horticulture	3,5 ha	33.244 €	2,40 WU	0 – 5 ha	2.884	13.990	1.531	504	18.909
Permanent tree crops	7,3 ha	14.941 €	1,27 WU	5 – 10 ha	257	981	797	81	2.116
Granivorous livestock	14,9 ha	140.112 €	2,46 WU	10 – 15 ha	153	391	118	24	686
Arable crops	18,7 ha	11.003 €	1,04 WU	15 – 25 ha	105	343	138	21	607
Herbivorous livestock	31,1 ha	43.000 €	1,81 WU	> 25 ha	77	377	59	9	522
Total					3.476	16.082	2.643	639	22.840

Source: National Institute of Agricultural Economics: Italian Agriculture in figures 2007: FADN 2004.

* DIVTOB Sample

** = Standard Work Unit

4.4 Identified Alternatives

Medicinal and aromatic plants
<i>Chamomilla recutita</i>
<i>Equinacea Purpurea</i>
<i>Hypericum Perforatum</i>
<i>Lavandula sp.</i>
<i>Melilotus officinalis</i>
<i>Melissa officinalis</i>
<i>Mentha piperita</i>
<i>Ocimum basilicum</i>
<i>Origanum vulgare</i>
<i>Rosmarinus officinalis</i>
<i>Salvia spp</i>
<i>Sideritis syriaca</i>
<i>Thymus vulgaris</i>
Field crops
<i>Amaranthus sp.</i>
<i>Cannabis sativa</i>
<i>Chenopodium quinoa</i>
<i>Fagopyrum esculentum</i>
<i>Sorghum ssp., Panicum ssp.</i>
<i>Triticum sp</i>
Miscellaneous special crops (vegetables, mushrooms, ...)
<i>Cynara cardunculus var. scolymus</i>
<i>Physalis peruviana</i>
<i>Stevia rebaudiana</i>
<i>Tuber melanosporum</i>
<i>Lentinus edodes</i>
Tobacco processing: i.e. cigars
Organic vegetables
Small Berries

Shrubs
<i>Actinidia deliciosa, Act. chinensis</i>
<i>Ribes nigrum</i>
<i>Rosa canina, Rosa rugosa</i>
<i>Rubus fruticosus</i>
<i>Rubus idaeus ssp. Idaeus</i>
<i>Sambucus nigra</i>
<i>Vaccinium corymbosum</i>
<i>Vaccinium myrtillus</i>
<i>Vaccinium vitis-idaea</i>
<i>Vitis vinifera</i>
<i>Vitis vinifera</i>
(Fruit) Trees
<i>Laurus nobilis</i>
<i>Olea europaea</i>
<i>Prunus armenica</i>
<i>Prunus cerasus, Prunus avium</i>
<i>Prunus domestica</i>
<i>Prunus dulcis</i>
<i>Punica granatum</i>
Renewable energy resources
<i>Miscanthus x giganteus</i>
Energy crops in general
Biogas and Bio diesel production
Alternatives on animal production
Cattle
Sheep/ meat
Sheep/ cheese
Pork
Organic meat
Aquaculture
Snail breeding

5. Estimated Costs and Benefits for Diversification Alternatives

The most feasible alternatives will be applied by a high number of Tobacco farmers. The table below shows such alternatives which can be executed by the family farms with less than 15 hectares of farm land. The following scenario has been calculated:

- a) 10.000 Farmers each substitution of 3 ha Tobacco.
- b) The Tobacco farmers are members of a Producer Organisation (PO).
- c) Investments are necessary on farm level where appropriate and on PO level.

Alternative 3 ha Tobacco substituted by:	Investment on Farm Level	Investment on Producer Organisation (PO) Level	Total initial Investment	Estimated Total Gross Margin
0,5 ha Green House Production	400.000 €* for 0,5 ha Green House (e.g. Hydroponics)	Manipulation and Packing 1 Mio. €for 250 hectares	4 Billion €on Farm Level 40 Mio. €on PO level	450 Mio. €
0,5 ha Green House Production	50.000 €** for 1 ha of Macro tunnels system	Manipulation and Packing 1 Mio. €for 250 hectares	500 Mio. €on Farm Level 40 Mio. €on PO level	450 Mio. €
Aquaculture One In door plant	325.000 €for 3 Farmers together	none	~ 1,1 Billion €	500 Mio. €
3 ha Field Vegetable Production	10.000 €for Farm Equipment	Manipulation and Packing 500.000 €for 500 hectares	100 Mio. €on Farm level 30 Mio. €on PO level	345 Mio. € with e.g. Table Tomato production
1,5 ha Stevia	Tobacco Equipment can be used	1 Mio. €per 500 hectares for production facility	30 Mio. € Investment on PO level + 16 Mio. €for approvals and applications	150 Mio. €

- * = Calculation Basis: 200.000 €per Work place for sophisticated green houses
- ** = Calculation Basis 50.000 €/ha for a macro Tunnels system like strawberry production in the province of Huelva, Spain.

The most costs effective alternatives for Tobacco diversification will be a combination of 1,5 ha field vegetable production (either organic or conventional) with Stevia rebaudiana each 1,5 hectares.

5.1. Estimated Time table to implement the diversification alternatives

Estimated Time schedule to implement the three most feasible alternatives for the small Tobacco farms of all DIVTOB target regions

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Organic Fruit and Vegetables									
Proposals for Financing and Contracts	█								
Sector Analysis		█							
Development of Regional Plans upon the Sector Analysis			█	█					
Conversion Time to Organic Vegetable and Fruit Production			█	█	█	█	█		
Certification Procedures and Training of the Farmers			█	█	█	█	█		
Start up Phase						█	█		
Full Production								█	█
Conventional Vegetable Production									
Proposals for Financing and Contracts	█								
Sector Analysis		█							
Development of Regional Plans upon the Sector Analysis			█	█					
Training of the Farmers			█	█	█	█			
Start up Phase					█	█			
Full Production							█	█	
Stevia Rebaudiana with necessary approvals									
Proposals for Financing and Contracts	█								
Execution for Test for Approvals		█	█	█					
Training of the Farmers			█	█					
Start up Phase				█	█	█			
Full Production					█	█	█		

Minimum Time Requirement

Maximum Time Requirement

6. Final DIVTOB Project Conclusions

Socio-economics: Diversification is in most of the Tobacco Growing Regions a very delicate undertaking as mainly small family farms are affected. A lot of interviews done during the DIVTOB project showed that the Tobacco farmers are not really prepared for the Tobacco reform.

Most prominent alternatives: But as a matter of fact, there is no alternative available which can be implemented until 2010. That is a major challenge which needs further research and innovation.

Impact on Labor: All scenarios show that the labor demand decreases whatever the alternatives are with the exemption of green house production.

Impact on Rural Development: The diversification alternatives shall push the rural development and shall give the chance for new jobs opportunities in the secondary and tertiary job sector. However, investments in research and innovations are necessary.

Final conclusions:

- A lot of diversification alternatives have been identified by the DIVTOB project and other national projects paid by the Tobacco funds.
- Most of the identified alternatives may have a limited local importance, but not a big impact on a larger number of farms.
- For the small Tobacco farms (< 15 ha) only a limited number of diversification alternatives can maintain their farm income:
 - ❖ Vegetable (and fruits) production either organic or conventional
 - ❖ Hydroponic production (soil less production)
 - ❖ Aquaculture
 - ❖ New crops e.g. Pomegranate, Stevia
- No identified alternative can be implemented until 2010.
- To diversify the Tobacco farms until 2013 a high investment in new production chains are necessary

7. Ad-hoc Proposals

Proposal 1:

To improve the economic feasibility of Tobacco produced in the EU

Study on the mechanisation of Tobacco production

Estimated costs of the study: 5 Mio. €
Proposed Project Execution: 2009 to 2011

Proposal 2:

Improved information for the Tobacco farmers on diversification alternatives, up-date of the regional situation and development of regional plans with following elements:

- Improved information and individual farm economic evaluation tool
- Up-dating of Diversification efforts of the Tobacco cooperatives in the DIVTOB target countries
- Vegetable and Fruit Production and development of regional plans
- Evaluation of all projects financed under the Tobacco funds Commission regulation (EC) No. 2182/2002

Estimated costs of the study: 1 Mio. €
Proposed Project Execution: Summer 2008 to Spring 2010 (18 months)

Proposal 3:

FP7-Projects for SME or SME Associations: for Technology Transfer of most feasible diversification alternatives

Tobacco funds: Article 13 of EU directive 2075/92 shall be used to finance multiannual programmes and specific measures to help Tobacco growers to switch to other crops or other economic activities that create employment.

It is proposed to set Article 104 Nr. 1b “Tobacco Funds” of Council Regulation 124/2007 of October in immediate execution and publish a call already in 2008 for projects to start with the execution in 2009 in order to finance multiannual programmes and specific measures to help Tobacco growers to switch to other crops or other economic activities that create employment.