

# WHAT WILL THE NEXT GENERATION DO WHEN THEY SUCCEED THEIR PARENTS ?

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## Abstract

In autumn 2003; a survey was carried out in six Austrian agricultural high schools in order to obtain an overview of students' attitudes towards organic farming. 25.5% of students from conventional farms have a negative attitude towards organic farming (27.5% hold a neutral attitude, 47% a positive attitude). Significant impacts of land use systems and social norms can be determined. Gender-related differences are highly significant, differences between the schools as well.

## Introduction

Austrian agricultural schools train a large section of future farmers in theoretical as well as practical knowledge of farm management. Thus, they should play an important role in promoting organic farming – which is also emphasized in the Austrian Organic Action Plan (BMLFUW 2001).

Relevant factors that either support or obstruct the conversion to organic farming methods have been investigated in various scientific studies (Darnhofer *et al.* 2005, Schneeberger *et al.* 2002). Similar studies that are, however, based on surveys among pupils and students attending agricultural high schools are not known to the authors.

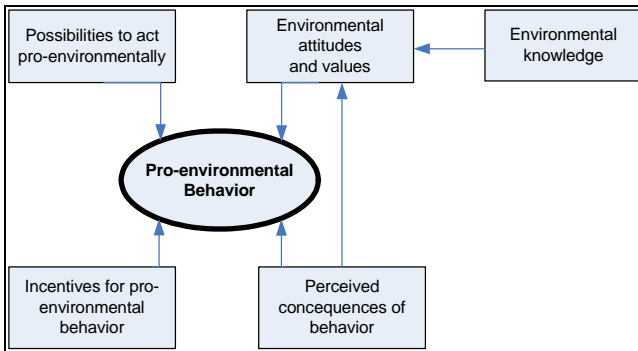
The overall objectives of this paper were (1) to identify students' attitudes towards organic farming and their intentions with respect to converting or not converting their parents' farms into organic farm management, (2) to define the main factors in the related decision process and (3) to examine the influence of schools and teachers on students.

## Methodology

Some of the most recognised models in Environmental Psychology and Behavioural Science were analysed to extract factors that could be relevant to the formation of students' attitudes and intentions in the context of organic farming and their decisions when taking over the farm management: the *Theory of Reasoned Behavior* (Fishbein & Ajzen 1980), the *Theory of Planned Behavior* (Ajzen 1985), the *Model of Ecological Behavior* (Fietkau & Kessel 1981, cit. in Schahn 1993) (see fig. 1) and a *Model of Predictors of Environmental Behavior* (Hines *et al.* 1986/87). A written, standardized questionnaire registering attitudes, intentions, opinions, wishes, social norms, knowledge etc. was handed out to 259 students in six Austrian agricultural high schools<sup>1</sup> in autumn 2003. 154 students from conventional farms form the focus group of this study.

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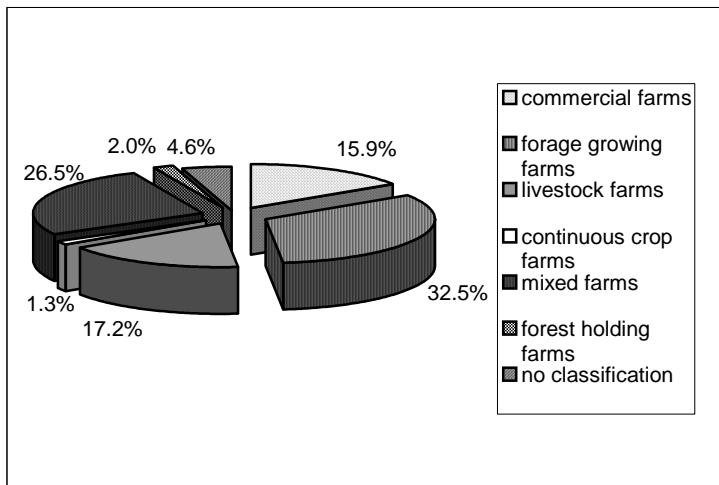
<sup>1</sup> Secondary vocational schools offering a five-year education with practical and theoretical contents to pupils aged between 15 and 20, general qualification for university entrance after passing the final exams. The study was carried out among pupils in final classes (mostly 19 and 20 years old).



**Figure 6: Model of Ecological Behavior (Fietkau & Kessel, 1981, cit. in Schahn 1993)**

### Results and Brief Discussion

32.5% of the questioned students are from forage growing farms, 26.5% from mixed farms (see fig. 2). 68.6% of the farms are managed as full-time farms and 31.4% as subsidiary part-time farms. The average surface amounts to 47.5 ha with 50% of the farms between 20 ha and 50 ha.



**Figure 2: Land use systems (n=154: pupils whose parents are conventional farmers)**

25.5% of questioned students from conventional farms expressed negative attitudes towards organic farming, combining their objections with “*pro-conventional*” intentions regarding the management of their parents’ farms (92.1% of students with negative attitudes). 47% of students, however, hold positive attitudes, but the majority of them (71.1%) would not adopt organic farming methods on their parents’ farms themselves. 27.5% of the students articulate a neutral attitude, which can be interpreted as students being either indifferent or incurious about organic farming. They are, on the contrary, more clear about their intentions: 94.9% express the intention to continue farming in a conventional manner. Breaking the sample down to analyse the attitudes and intentions of those who are going to succeed their parents in farm management (at least 50.7% of the students and possibly some 11.8% more who are not sure about the farm transfer yet), the proportion of students with negative (31%), neutral (27.6%) and positive attitudes (41.7%) almost remains the same. A higher number of students with positive attitudes but expressing the willingness to convert to organic farming methods (33.3%) becomes evident.

Attitudes and intentions are subject to differences between the schools – highly significant Chi-Square values are measured in both cases: the relationship between the factors *school* and *attitudes* ( $p < 0.004^{**}$ ) and *school* and *intentions* ( $p < 0.002^{**}$ ) (comp. tab. 1).

**Table 6: Attitudes towards organic farming and intentions in Austrian Agricultural High Schools (n=154: students whose parents are conventional farmers)**

			Schools						Gesamt
			1	2	3	4	5	6	
Attitude towards organic farming	negative	number of pupils	14	1	12	3	5	3	38
		expected number	11,2	3,8	8,4	5,1	3,8	5,6	38,0
		% of school	31,8%	6,7%	36,4%	15,0%	33,3%	13,6%	25,5%
		standardized residuals	,8	-1,4	1,2	-,9	,6	-1,1	
neutral		number of pupils	14	2	11	1	6	7	41
		expected number	12,1	4,1	9,1	5,5	4,1	6,1	41,0
		% of school	31,8%	13,3%	33,3%	5,0%	40,0%	31,8%	27,5%
		standardized residuals	,5	-1,0	,6	-1,9	,9	,4	
positive		number of pupils	16	12	10	16	4	12	70
		expected number	20,7	7,0	15,5	9,4	7,0	10,3	70,0
		% of school	36,4%	80,0%	30,3%	80,0%	26,7%	54,5%	47,0%
		standardized residuals	-1,0	1,9	-1,4	2,2	-1,1	,5	
<b>Total</b>	number of pupils	44	15	33	20	15	22	149	

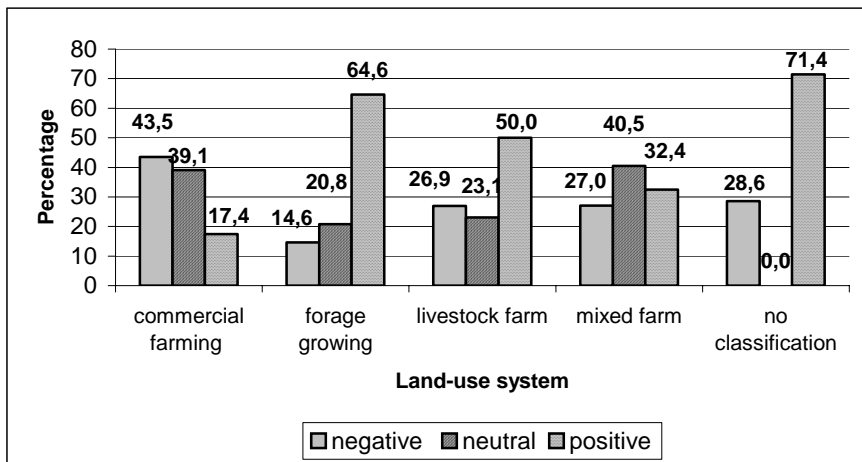
			Schools						Gesamt
			1	2	3	4	5	6	
intentions regarding conversion to organic farm	conventional	number of pupils	44	8	25	9	12	17	115
		expected number	37,0	10,2	22,8	14,2	11,8	18,9	115,0
		% of school	93,6%	61,5%	86,2%	50,0%	80,0%	70,8%	78,8%
		standardized residuals	1,1	-,7	,5	-1,4	,1	-,4	
methods	organic	number of pupils	3	5	4	9	3	7	31
		expected number	10,0	2,8	6,2	3,8	3,2	5,1	31,0
		% of school	6,4%	38,5%	13,8%	50,0%	20,0%	29,2%	21,2%
		standardized residuals	-2,2	1,3	-,9	2,6	-,1	,8	
<b>Total</b>	number of pupils	47	13	29	18	15	24	146	

### High Schools: 1-Wieselburg, 2-Elmberg, 3-St.Florian, 4-Pitzelstätten, 5-Ursprung, 6-Raumberg

Parents' attitudes towards organic farming (father as well as mother) and students' attitudes and intentions are significantly related (both: Chi-Square  $p < 0.001^{***}$ ). Any significant relations between teachers' opinions towards organic agriculture and the attitudes as well as the intentions of students can not be found. 76.7% of the students believe that their teachers' attitudes towards organic farming are *very positive or rather positive than negative*. 73.5% of students indicate that the opinion of their teacher is important. 68.3% of students estimate their colleagues' attitudes to be *rather negative or negative* but there are some variations between the schools: thus in Wieselburg and St. Florian pupils experience their colleagues' attitudes towards organic farming as relatively more negative than students in other schools do.

A highly significant Chi-Square ( $p < 0.006^{**}$ ) indicates that there is a relation between students' attitudes towards organic farming and the land use systems of their parents' farms (comp. fig. 3). Almost all commercial farms (15.9% of the whole sample) are concentrated in those two schools (Wieselburg 54.2%, St. Florian 37.5% of commercial farms) situated in areas of intensive agricultural production (mostly arable farming), where students express the most negative attitudes towards organic farming (see also tab. 1).

On the contrary, Elmberg, a school situated in this area as well, shows its focus on students from forage growing farms (50%), only 8.3% are commercial farms.



**Figure 3: Attitudes towards organic farming and land-use systems of their parents' farms (n=154: students whose parents are conventional farmers)**

The high rate of students from forage growing farms in Raumberg (56.6%) and Ursprung (46.6%) reflects the importance of grassland farming in the Federal states Styria and Salzburg and corresponds to significantly more positive attitudes towards organic farming.

It can be concluded that students are split up in “*pro-conventionals*” - regarding their attitudes towards organic farming - mostly from commercial farms (43.5% from n=23) and “*pro-organics*” from forage growing farms (64.6% from n=48) and livestock farms (50% from n=26).

Furthermore differences in attitudes and intentions between girls and boys became apparent: girls show a more positive approach towards organic farming. Gender-related differences are supposed to play a key role when it comes to positive attitudes of students in the schools Elmborg and Pitzelstätten - schools that are mainly attended by girls due to a focus on *agriculture and food economy* whereas the other schools offer a purely agricultural education.

The Chi-Square test indicates a highly significant relationship between sex and attitudes ( $p < 0.001^{***}$ ) due to an over-represented contribute of girls with positive attitudes and an under-represented part with neutral attitudes.

The Spearman's rho measures a highly significant correlation between students' attitudes and intentions ( $r = 0.476^{***}$ ,  $p < 0.001$ ; Chi-Square  $p < 0.001^{***}$ ) although the correlation of attitudes and intentions as stated in the *Theory of Planned Behavior* (Ajzen 1985) can be found confirmed in the present study as well.

The relationship between attitudes, intentions and land use systems corresponds to the observed development of organic farms, concentrated in the mountainous areas of (western) Austria that are predominantly dairy farms (Eder 2003). In the eastern and northern parts of Austria, where land use is dominated by arable land, conversion has proceeded at a slow rate (Schneeberger *et al.* 2002).

## Conclusion

Although a significant relationship between *schools* and *attitudes* towards organic farming and *intentions* can be stated, the missing link between the attitudes of teachers and students' opinions and intentions may indicate that there are other factors than education that may be essential: Students are influenced in their attitudes towards organic farming by a large variety of factors. Therefore, it is wrong to consider only the importance of the agricultural education in pushing the conversion to organic farming. Factors like land use systems, sex, social norms (e.g. attitudes from parents, friends, colleagues) are highly significant influential factors. We have pointed out the complexity in the decision process and that simple teacher-student models are too short-reaching. To analyse and understand those factors and their interactions, a rigid analysis (e.g. in-depth interviews with students and teachers) proved very instructing.

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