

characteristics are diversified operations, engaged in certain products, organic, technologically advanced, and no-till user.

Other characteristic was mentioned for farmers who have **diversified operations**, with “*multiple cropping systems and land uses.*” They are found to have “*Diversity and flexibility in the farm operation. OR a clear conviction that the farm's history of low diversity and/or conventional practices has adversely affected the soil, the health of crops, livestock or farmer & family, or the farm's economic viability.*”

Other identified characteristics of sustainable operations is that they are **engaged in certain products** “*such as forages, corn, soybean, cotton, etc.*” because these are more profitable alternatives, or “*long term crops (trees, pasture, wildlife),*” perhaps because they represent an investment. In addition, certain commodities are favored for adoption due to the availability of alternative practices for them or, in the contrary, disfavored if they lack of such alternatives, “*It is a huge problem for producers of vegetables or tobacco or similar crops with limited erosion control alternatives.*”

This issue is some times directly associated with **organic** farming, referring to “*those [farmers] that are organically inclined*” as the ones that would firstly consider adoption of sustainable practices, “*The first adopters are in this area the organic growers who tend to just produce small acreage, but not absolutely devoted to sustainable ag.*” The **scale of the operation** is a factor that determines the time needed to implement new practices, being favored in this case small operations that will need less time, “*Small acreage producers where time of scheduling is not a factor.*”

Other sustainable operations were characterized as **technologically advanced** or at the “*cutting edge,*” “*These are going to be the farmers that have advance technology in their day to day farming operations. The farmers that are looking for ways to improve the work output at the same time adding a big impact on their dollar intake,*” Due that no-till seem to be one of the most widely adopted sustainable practices, other characteristic identified is that sustainable farmers will be **user of no-till** methods for a certain period of time, “*no-till cropping methods being used for long term (more than 5 years).*”

Barriers to Adoption

Change agents were asked: What were the major obstacles or barriers that producers must overcome to adopt sustainable agriculture practices? Their responses to this question are summarized in the following eight categories. From the total responses to the survey, 78 percent of respondents answered this question, thus a percent in relation to total survey response and in relation to responses to this question are provided in the following table.

Table 6. Main categories of perceived barriers to adoption of sustainable practices, regional change agents, 2004.

Category	Number	Percent of responses to question (N=210)
Economic Factors	118	56
Education and Information	111	53
Resistance to change	50	24

Barriers Related to Sustainable Agriculture		
Technologies	48	23
Social Context	33	16
Financial and Material Infrastructure	19	9
Land Tenure Constraints	15	7
Personal characteristics	7	3

Economic Factors

Many economic factors constrain the adoption of sustainable practices. The following economic factors are costs, farmers' financial situation, change of equipment, uncertainty, equipment change, incentives, risk, and low commodity prices, deferment of benefits, federal programs (See Appendix C3).

The most frequently mentioned by respondents is **cost**, this includes in first place the "*initial cost*" of "*converting*" or "*changing practices*" including the "*cost of new equipment*" but also the costs of "*changing for one management style to another.*" More over one change agents affirm that the "*cost of transitioning to a more sustainable or organic system is great.*" One change agent remarked that farmers would be willing to adopt sustainable practices if this means, "*incorporating practices into existing rotations without having to make large capital investments.*"

In addition to initial cost there are also "*cost of the[new] system*" which are permanent or "*extra costs*" such as new inputs' "*transportation costs*" (e.g. "*organic materials*"). One respondent called the attention to the cost of sustainable compared to conventional practices stating, "*Synthetic products are cheaper in general unless you are using a by-product of your farm operation.*"

An additional reason for farmers need of short-term benefits is their **financial** situation, their "*lack of ...financial resource,*" "*money*" or "*capital*" to keep their business running under conventional farming. This is an important barrier to implement new practices, as stated, "*Most producers need to generate the maximum cash flow to keep the business running.*" They are found "*cash strapped,*" as one respondent clearly explained "*so many growers are so squeezed financially that, even if their current financial situation under conventional farm [management] is terrible, they are afraid to make the jump into sustainable practices.*" One reason for which the financial situation of farmers is a barrier to adoption was explained as, "*too many years of poor [management] places soil nutrient levels at a level that recovery does not fit into the cash flow. EQIP incentives offer some, [but] not enough.*"⁸

Other barrier for adoption of sustainable practices is the **uncertainty** or "*fear of the unknown.*" Farmers have "*suspicion of new practices*" or "*uncertainty of consistency [of] new practices*" in terms of maintaining their profits. Uncertainty makes farmers to

⁸ The Environmental Quality Incentives Program (EQIP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.