



Surveys

Consumer and citizen roles and motives in the valuation of agricultural genetic resources in Finland



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ABSTRACT

This study analysed consumer and citizen roles in contingent valuation of a conservation programme of agricultural genetic resources and a native breed product. The willingness to pay (WTP) for the conservation programme (€48) was mainly driven by perceived taxpayer responsibility and existence and use motives, while the WTP for the product (price premium of 14%) was to a larger extent associated with perceived purchaser responsibility. We identified four respondent groups: those who emphasized citizens' or consumers' roles, indifferent and negative, which differed in terms of their conservation motivations, responsibility perceptions and WTP. Furthermore, the results emphasize that citizen and consumer roles overlap, and individuals may act as either or both in the context of a purchasing decision and a taxpayers' decision of policy support. Although the conservation programme received more support, future conservation could partly be based on the consumption of specialty products.

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1. Introduction

In the past, locally adapted animal breeds and plant varieties have dominated traditional agricultural production systems. However, the intensification of agriculture has led to significant changes in the utilization of genetic resources and, as a result, many previously common animal breeds and plant varieties have become rare or even endangered. At present, many traditional breeds and varieties face extinction. Of the world's farm animal breeds, 20% are endangered and the number is still increasing. The situation is especially critical in Europe, where 28% of the mammalian and 49% of the avian breeds are endangered (FAO, 2007). In Finland, the Eastern and Northern Finncattle, as well as the Kainuu Grey and Åland sheep, are endangered according to the FAO classification (FAO, 2003), and the majority of the old Finnish crop varieties and the Finnish Landrace pig are already extinct.

Uncertainty over future conditions and needs emphasizes the necessity to conserve native breeds (Oldenbroek, 2007). The protection of genetic resources in agriculture is an important part of biodiversity conservation. Agricultural genetic resources (AgGR) include all cultivated plant species and varieties, as well as all animal species and breeds that are of interest in terms of food and agricultural production. The Convention on Biological Diversity (1992) and national conservation programmes aim to conserve AgGR in situ (live animals and plants) and ex situ (as seeds, cryopreserved embryos and other genetic material) with various technologies, regulations, economic incentives, and through awareness raising (FAO, 2007). However, in situ conservation

faces challenges, as its success depends on many internal and external factors that affect producers' motivations (Gandini et al., 2010). Beyond conservation, the sustainable use of genetic resources on a level that maintains genetic diversity is preferred (FAO, 2007). Using native breeds and varieties on farms yields income, and the genetic material is dispersed and also adapted to the gradual changes in environmental conditions (Oldenbroek, 2007). Sustainable use can be further promoted by developing high-value specialized products. If their production is profitable, the need for expensive conservation measures may decrease.

The benefits of conservation largely arise from the potential use of breeds or varieties in breeding programmes for developing desirable agronomic traits, such as disease resistance, adaptation to specific agroclimates and increased yield. Although these benefits cannot generally be observed by consumers, in many cases, also consumers and citizens may obtain benefits from conservation. The different approaches to the conservation and sustainable use of AgGR raise an issue of individual preferences for different genetic resource policies, i.e. whether individuals perceive conservation as a social responsibility or if they would be willing to support conservation through consumption choices. In the valuation literature, there is an ongoing debate over the consumer and citizen roles in valuation (e.g. Howley et al., 2010; Blamey et al., 1995; Rolfe and Bennett, 1996). That is, in the role of a "consumer", the individual acts as an agent only for herself. In the "citizen role" the individual acts as an agent for society, evaluating alternatives according to some social welfare function, not her own narrowly selfish utility function. In the case of genetic resource conservation, both of these roles are understandable, the citizen's role in terms of social responsibility and the consumer's role in terms of self-interested preferences, and they can offer support for either traditional conservation or sustainable use.

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Decisions on the focus and extent of conservation require knowledge of the economic value of genetic resources, and there is a specific need for more information on the values people place on genetic resources in developed countries (Ahtiainen and Pouta, 2011). The purpose of the present study was to fill this gap by approaching the economic value of AgGR from two perspectives. First, we analysed the value of an AgGR conservation programme for plant and animal genetic resources, adding to the limited knowledge of the value of agricultural genetic resources (Cicia et al., 2003; Birol et al., 2006a, 2006b; Zander et al., 2013) and the preferences for conservation policies (Fadlaoui et al., 2006) in Europe. Second, we studied people's willingness to support conservation by purchasing Finncattle meat as a specialized product. The Finncattle is currently endangered,¹ but profitable high-quality products could increase the demand for the breed and encourage farmers to raise more Finncattle. As the possibilities to buy Finncattle meat are very limited – few farms sell the meat directly to consumers, and it is available in a small number of specialty shops and restaurants – we used stated preference methods to examine this issue.

Including these two conservation approaches provides a fruitful setting for examining consumer and citizen perspectives in the case of genetic resources. Our hypothesis is that respondents take on both citizen and consumer roles, i.e. they consider genetic resources from the point of view of both public and private goods. However, these two roles are likely to be emphasized differently depending on the context. Therefore, we investigate how the public policy and purchasing contexts affect the roles and motivations of respondents. We examine whether perceived taxpayer and purchaser responsibilities and the importance of use and non-use motives differ between the genetic resource conservation programme and the purchasing decision. Here, we also discuss and evaluate the two conservation options based on stated values. Instead of assuming that respondents state their preferences as either citizens or consumers, we are interested in determining the importance of citizen- and consumer-related motives in the two decision contexts. Additionally, we investigate the possible heterogeneity in respondent motivation and the significance each role has in the two settings.

This paper is organized as follows. Section 2 discusses the previous literature on consumer and citizen roles and motives in valuation studies. Section 3 introduces the data and the methodological framework. We present the results in Section 4, and Section 5 provides discussion and conclusions.

2. Previous Literature

There is an ongoing debate in the non-market valuation literature over whether respondents behave as consumers or citizens in valuation surveys, and whether their willingness to pay (WTP) responses differ depending on the role (e.g. Alphonse et al., 2014; Howley et al., 2010; Ovaskainen and Kniivilä, 2005). According to Blamey et al. (1995), a fundamental assumption of the contingent valuation method (CVM) is that responses can be interpreted as consumer preferences. However, in many cases, WTP is partly generated by ethical concerns. According to Sagoff (1988), individuals can act as either a citizen or a consumer, and when facing ethically difficult decisions, they act as citizens. Also Nyborg (2000) has stated that it is easier for a respondent to behave as a consumer when requested to assess market goods, but when asked to value issues such as biodiversity conservation, it might be more natural to take the citizen point of view. This implies that in many valuation studies, respondents act more like citizens expressing social or political judgments rather than preferences over consumption

bundles. Hence, valuation responses may partly take into account the benefits to others, rather than entailing exclusively personal benefits.

In order to accurately estimate the aggregate WTP, it is important that individual WTP estimates reflect individual values instead of benefits perceived by the community. If the reported welfare measures take into account the benefits to others, the aggregate benefit measures may lead to double counting (Blamey et al., 1995; Nyborg, 2000). It has nevertheless been emphasized that in addition to this type of counting of benefits to others, individuals can perceive personal benefits from altruism. This does not bias the benefit measures and can be seen as similar to other self-interest motives (Hanemann, 1994; Curtis and McConnell, 2002; Ovaskainen and Kniivilä, 2005). Spash (1998) argues that the self-interested model of the individual has dominated in economics and the importance of individual motives has been brushed aside, although economic and ethical questions actually merge in valuation.

Beyond the non-market valuation of environmental benefits, the motives of citizens are also increasingly more often seen in the purchase behaviour of regular goods. Specifically, there has been a substantial growth in ethical food consumption, defined as the conscious decision to make consumption choices for reasons having to do with moral beliefs (Zander and Hamm, 2010). For instance, the consumption of organic food has increased in the last decade, especially in Europe, where the annual growth in the market for organic products has been about 10% per year (European Commission, 2010). Ethical consumerism, i.e. consumption taking social and environmental concerns over products into account, also comprises issues of biodiversity protection (Browne et al., 2000; Carrigan et al., 2004). As the ethical aspects may be observable in market prices, the ethical or altruistic motives for buying have not been considered to cause bias in the values of goods.

Some existing empirical valuation studies have shown that the framing of the choice as either a commodity or a social policy decision has only minor effects on WTP (Curtis and McConnell, 2002). Howley et al. (2010) found that WTP is insensitive to whether it is asked from a personal or a social perspective. Although individuals might express different preferences according to whether they adopt the citizen or consumer viewpoint, the differences were observed to be minor. In contrast, Alphonse et al. (2014) reported twice as high a willingness to pay for citizens compared to consumers. Also, Ovaskainen and Kniivilä (2005) observed considerable differences in WTP, and stated that in the future, investigation of the motives of respondents could provide important information for defining the presence and type of altruism and an explanation for the roles of consumers and citizens.

In the previous literature, it has been suggested that citizen or consumer motives could be identified based on the relative importance of the consumer and citizen variables in determining the WTP responses. For example, Blamey et al. (1995) speculated that consumer variables would include price and income variables, whereas attitudinal variables would imply citizen motives. However, they emphasized that motivations behind valuation responses require further research. In turn, de Backer and Dagevos (2012) stated that egoistic and altruistic motivating factors are not strictly separable. They considered the distinction between citizens and consumers artificial, since private and political interests are entwined.

Taking into account altruistic or egoistic motives has been recognized as an important element in valuation (Johansson-Stenman, 1998) that affects WTP estimates (Ojea and Loureiro, 2007). Although the total economic value framework (Randall and Stoll, 1983) reveals both altruistic and egoistic components of the total value, it has seldom been linked to citizen or consumer roles. In the framework, non-use values, such as altruistic, bequest or existence values, could be interpreted to be associated with the citizen perspective, while use values could relate to more egoistic consumer perspective.

Several previous studies have focused on the heterogeneity of individual motives behind ethical purchasing, as well as behind the valuation statements. Attitudinal statements, such as valuation motives,

¹ Three cattle breeds, i.e. Eastern, Western and Northern Finncattle, are together referred to as Finncattle. The populations of Eastern Finncattle (approximately 800) and Northern Finncattle (slightly under 1000) are endangered. Western Finncattle is rare with a population of 3000 (Hiemstra et al., 2010).

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