

Appendix E: Evaluation of project impact on participant views about sustainability

E1: Evaluation method

The methodology for analysing project impact using participants' views about sustainability was described in milestones one and two (sections 9 and 7). Preliminary data from early questionnaires were reported in milestone three. Each participant filled in a questionnaire at the first and subsequent workshops, and gave us the name and address of a "twin" - a person with similar profession, background and values who is not involved in the project. The twin was approached by phone and asked to fill in the same questionnaire. Stakeholders and their control group answered questionnaires during workshops in 1997 and 1999. Participants in the institutional change process (the policy makers) and their control group completed questionnaires during workshops in 1997 and 2000.

E2: Analyses

Results were analysed using content analysis (Whyte 1977) and visual interpretation only, statistical analysis was not warranted based on visual inspection. Responses were grouped into categories of words and concepts that were mutually exclusive. Data are presented as relative frequencies of occurrence. It was desirable to test for difference between sectors, but insufficient representation within some sectors forced the pooling of data.

Four hypotheses were assessed. Each category of response was evaluated separately. Hypotheses were that:

- there is no difference in frequencies between the participant and the control group in 1997;
- there is no difference in frequencies between the control group in 1997, and the control group at the end of the project.
- there is no difference in frequencies between the participant and the control group at the end of the project;
- there is no difference in frequencies between the participant group in 1997, and the participant group at the end of the project.

The first hypothesis was accepted giving weight to the proposition that participants and controls were from the same population and held similar views. The second hypothesis was accepted as there was no visible evidence of systematic change in the control group over the course of the project. This gives weight to the proposition that views amongst the population not exposed to the project were relatively stable.

Given the results for hypotheses one and two, the third and fourth hypotheses would be expected to give the same answer. Both showed no systematic effect, suggesting the project had no observable impact on the way participants perceived sustainability.

The evaluation of all hypotheses should be treated with caution due to small sample sizes for the respondents. We only included data when the participant had a control. Without this approach it would have been spurious to claim any change in perceptions as being due to the project when major resource use and conservation issues are regularly in the press, as well as affecting the lives of many of our participants directly. It proved difficult to recruit and keep participant-control pairs. Thus, although we began with a reasonable sample size of participants (44 for the stakeholder and 78 in the institutional change process), it was difficult from the start to recruit controls. One person spent half their time on the telephone cajoling controls for their questionnaires. This was despite paying private individuals \$40 per

completed questionnaire. Unfortunately many controls that participated initially did not stay with the project, or their status changed. In the case of the Conservation sector their total numbers are small. As participants left the project for various reasons their replacements tended to be our controls. By the end of the project in total we had only 9 pairs of stakeholders, and 22 policy makers. In combination with high variability between individuals this would mask any impacts, either background or directly attributable to the project.

The evaluation was nevertheless worth doing because of the qualitative responses to the questions. These are discussed for the stakeholder process next, then for the institutional change process.

E3: Perceptions of sustainability by participants and controls in the stakeholder process

Stakeholders (participants) and controls (non-participants) were asked questions about sustainability. Their answers were classified into detailed categories, which were subsequently pooled for this report. Results are presented as frequencies. In the figures “relative frequency” means the raw frequency count was expressed as a percentage of the number of respondents. Because respondents could make more than one contribution to each category the relative frequency can exceed 100. Where the frequency is expressed as a percentage of the total number of occurrences of all categories, the term “percentage frequency” is used. The titles of the figures contain the questions put to the policymakers.

E3.1: What are the elements of “sustainable land use”?

A relatively high proportion of respondents mentioned time in relation to sustainability. They also recognized social, economic and ecological dimensions to sustainable land use (Figure E1). Most stakeholders look less than 100 years ahead when considering sustainability (Figure E2). There was an unexplained decline in the 0 > 50 year category for both participants and controls between 1997 and 1999. Some participants (but no controls) considered an infinite time horizon.

E3.2: Could climatic change affect sustainability of land use in the region ?

Respondents overwhelmingly believed climatic change could affect land use sustainability (Figure E3). Reasons included changes in rainfall, including droughts (Figure E4).

E3.3: Do stakeholders wish to see changes in land use in the region?

The great majority of respondents wanted land use change in the region (Figure E5). Reasons included the promotion of nature conservation, reductions of land degradation and resource over-use, and improvements in management (Figure E6). A strong majority of stakeholders believed their group could influence land use (Figure E7). Mechanisms included ready access to policymakers and stakeholders, and the political power of the group (Figure E8). Changes in pastoral management and policies, and changes in attitudes were seen as important for securing desirable changes in land use (Figure E9). Perceived benefits from achieving desired changes included nature conservation, and economic and social advantages (Figure E10). A possible negative effect of change was perceived to be social re-adjustments (Figure E11).

E4: Perceptions of sustainability by participants and their controls in the institutional change process

Policy makers and controls were asked questions about sustainability. Their answers were classified into detailed categories, which were subsequently pooled. Results are discussed next.

E4.1: What are the elements of “sustainable land use”?

Answers were classified by content analysis into the categories in Figure E12. Like the stakeholders (Figure E1), an encouraging proportion of policy makers included social, economic and ecological dimensions in their definition. Not all included a time dimension. The category “to use land without long term decline” merely a repetition of the question. The neighbouring category involves improvement of the land through using it.

Answers to the question “what makes a regional pattern of land use sustainable?” are summarised in Figure E13. “Theory underpinning resource management” was deemed important; also “local culture supports sustainable management. “Practical management of land “ was important on its own, and if combined with the management of water, soils, vegetation, fauna and biodiversity the management emphasis would have been very strong. “Diversity of enterprises”, “good prices”, “financial viability”, ‘information and organisation”, “appropriate legislation” and “political will and influence” were not emphasised. These were all considered by the researchers to be the key levers for influencing regional sustainability. A supplementary question asking what factors cause a regional pattern of land use to be unsustainable produced answers that were mirror images of those in figure D13, without yielding additional insights.

E4.2: Indicators of sustainability.

Respondents were asked to name five indicators for measuring sustainability. Bio-physical indicators were rated very important (Figure E14). This included biodiversity. Human population trend was rated highly too, and so was financial viability. The latter was rated as relatively unimportant as a source of regional land use sustainability, but it could nevertheless be a useful indicator.

E4.3: How many years ahead do policy makers look when considering sustainability?

When asked how far ahead they look when considering sustainability (Figure E15), the most common response was up to 100 years. Significant numbers of policy makers had shorter and longer perspectives.

E4.4: Influences that encourage change from unsustainable to sustainable land uses.

Respondents were asked to rank the three strongest influences that encourage change from unsustainable to sustainable land uses (Figure E16). Financial viability was seen as important by a high proportion of respondents. This contrasts with the low importance given to this factor as a source of regional sustainability. Financial viability depends on commodity prices and costs of production, either of which can be changed by subsidies, or viability could be improved through stewardship payments (Appendix C). The importance of individual management action was also noted by respondents. While amenable to investment in extension services and Landcare, response time would be slow. Interventions researchers saw as important – legislative changes and incentive schemes - were not rated especially important by policy makers, although we have already noted the potential link between incentives and financial viability.

E5: References

Whyte, A V, (1977). Guidelines for Field Studies in Environmental Perception. Man and the Biosphere Technical Note 5, UNESCO, Paris.

Figure E1. (Stakeholders). What do you understand “sustainable land use” to mean?

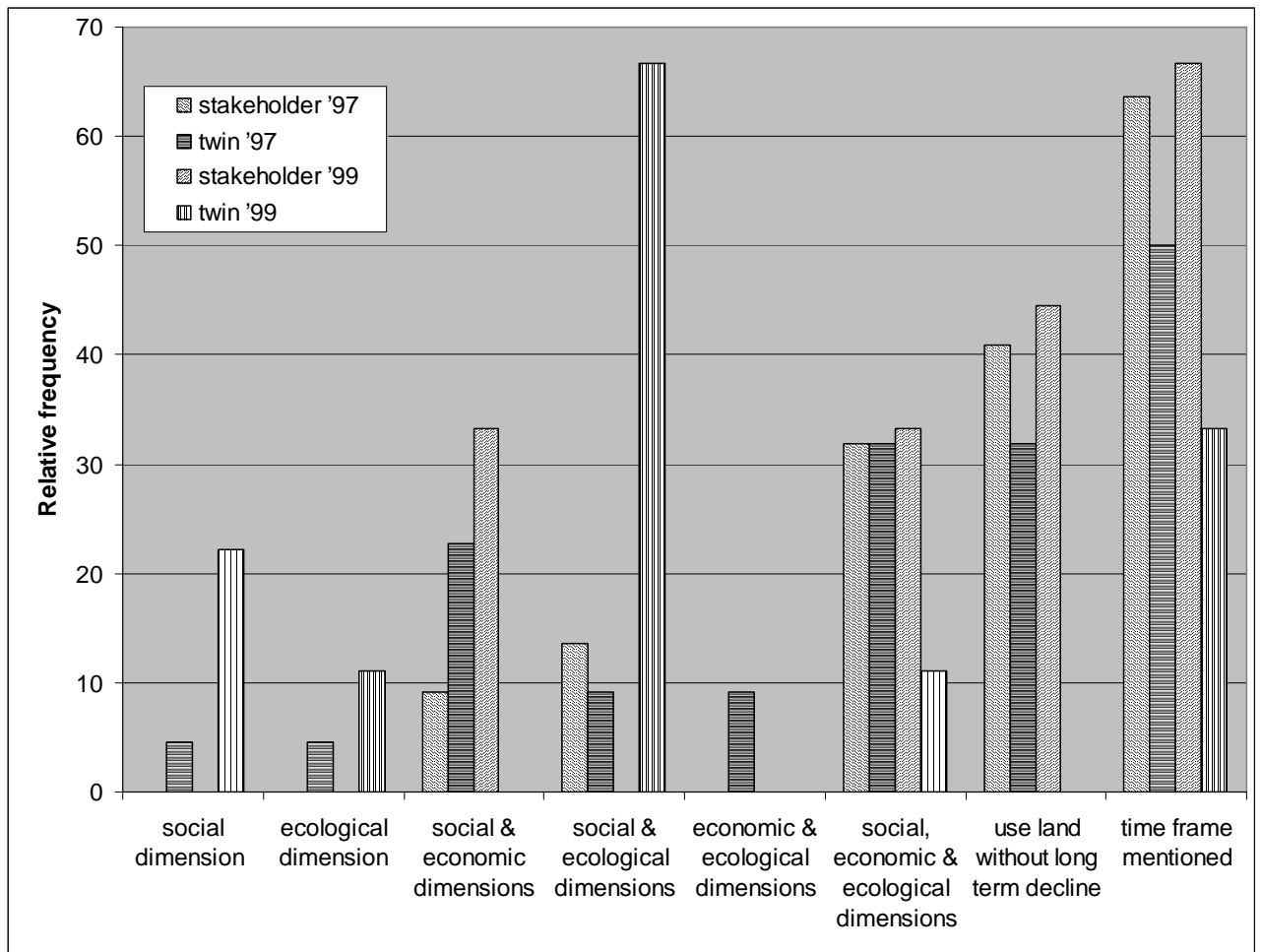


Figure E2. (Stakeholders). How many years ahead do you look when considering sustainability?

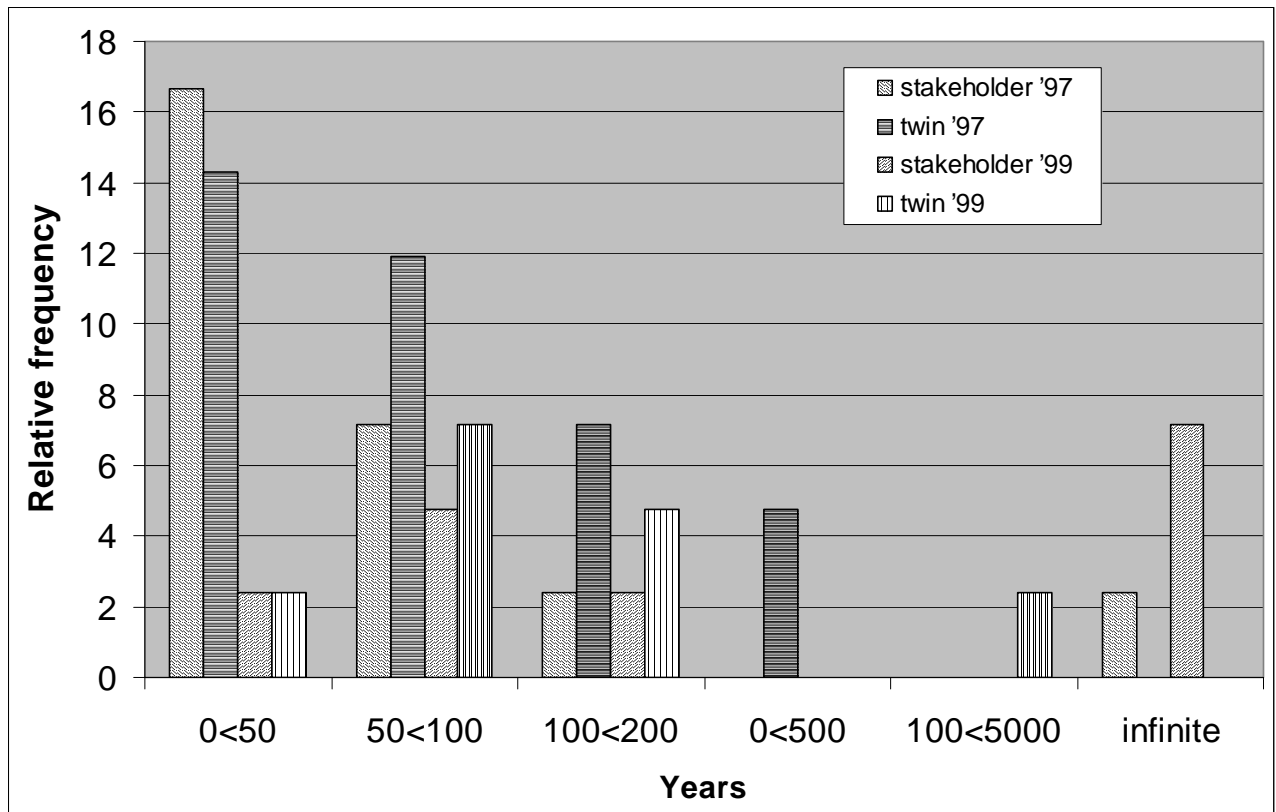


Figure E3. (Stakeholders). Could climatic change affect sustainability of land use?

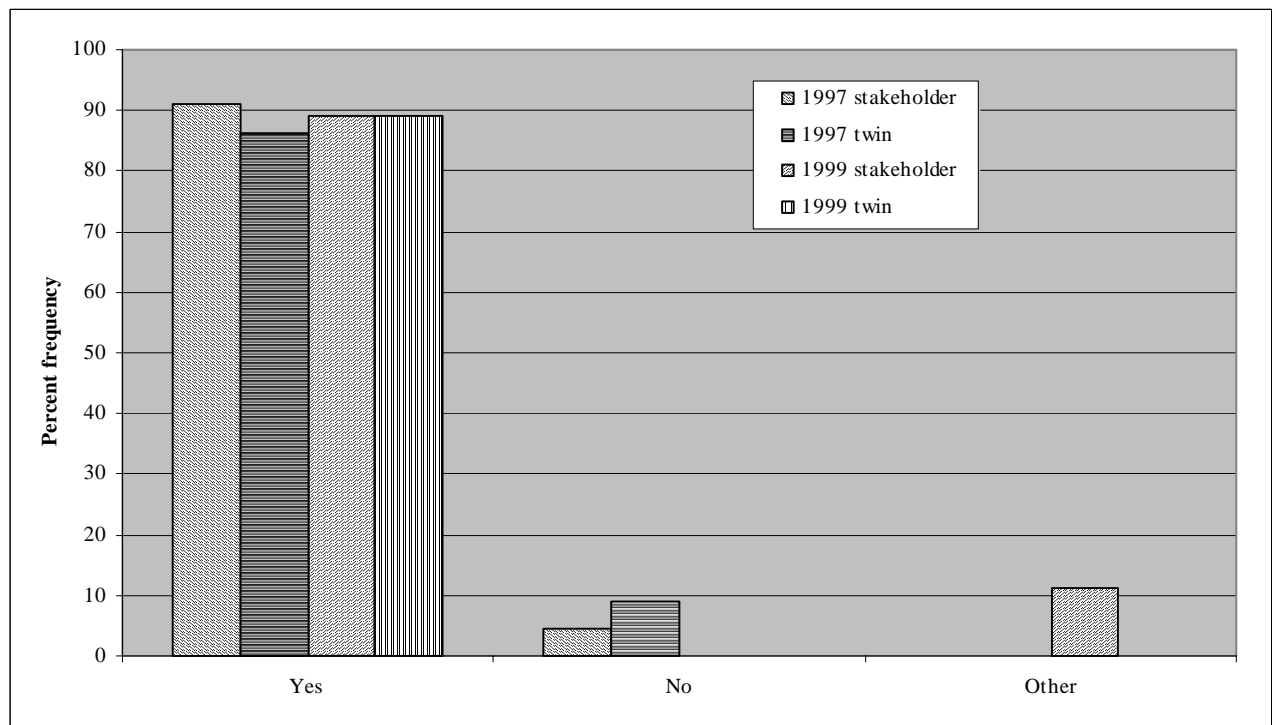


Figure E4. (Stakeholders). How could climatic change affect sustainability of land use?

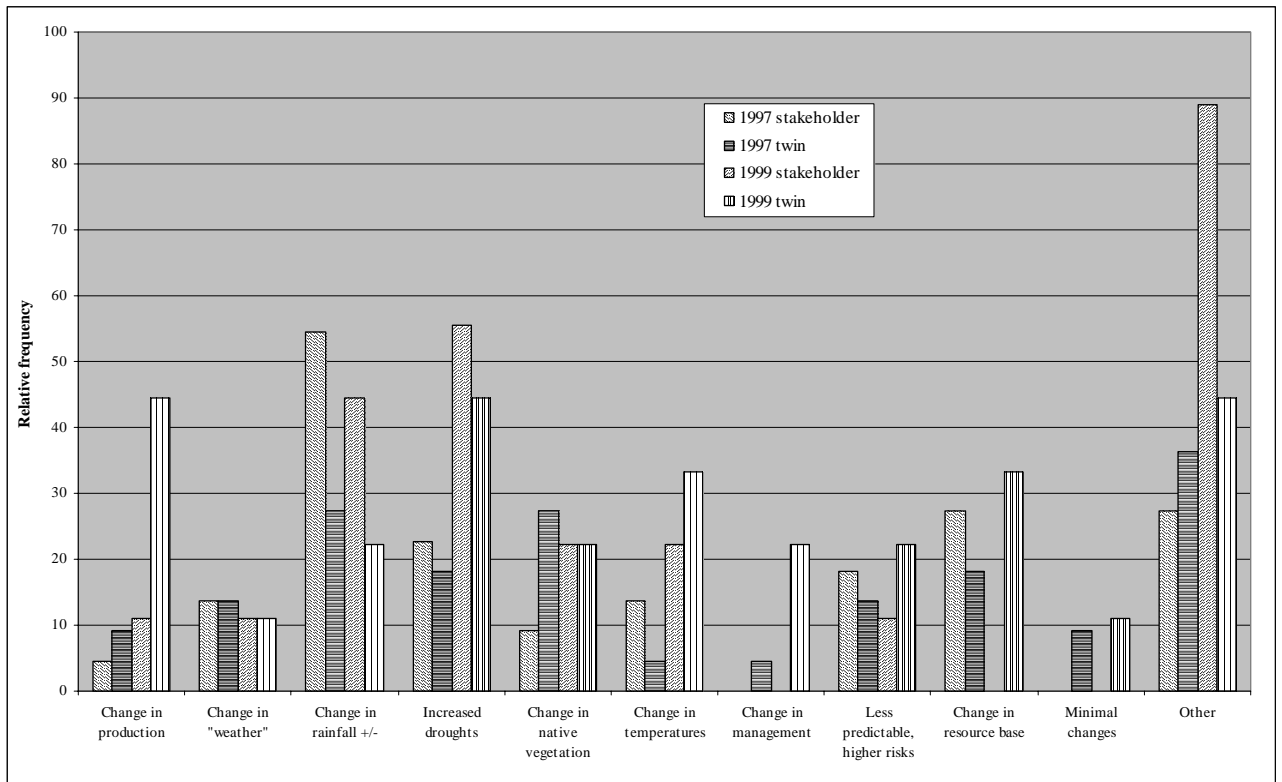


Figure E5. (Stakeholders). Do you wish to see changes in land use in the region?

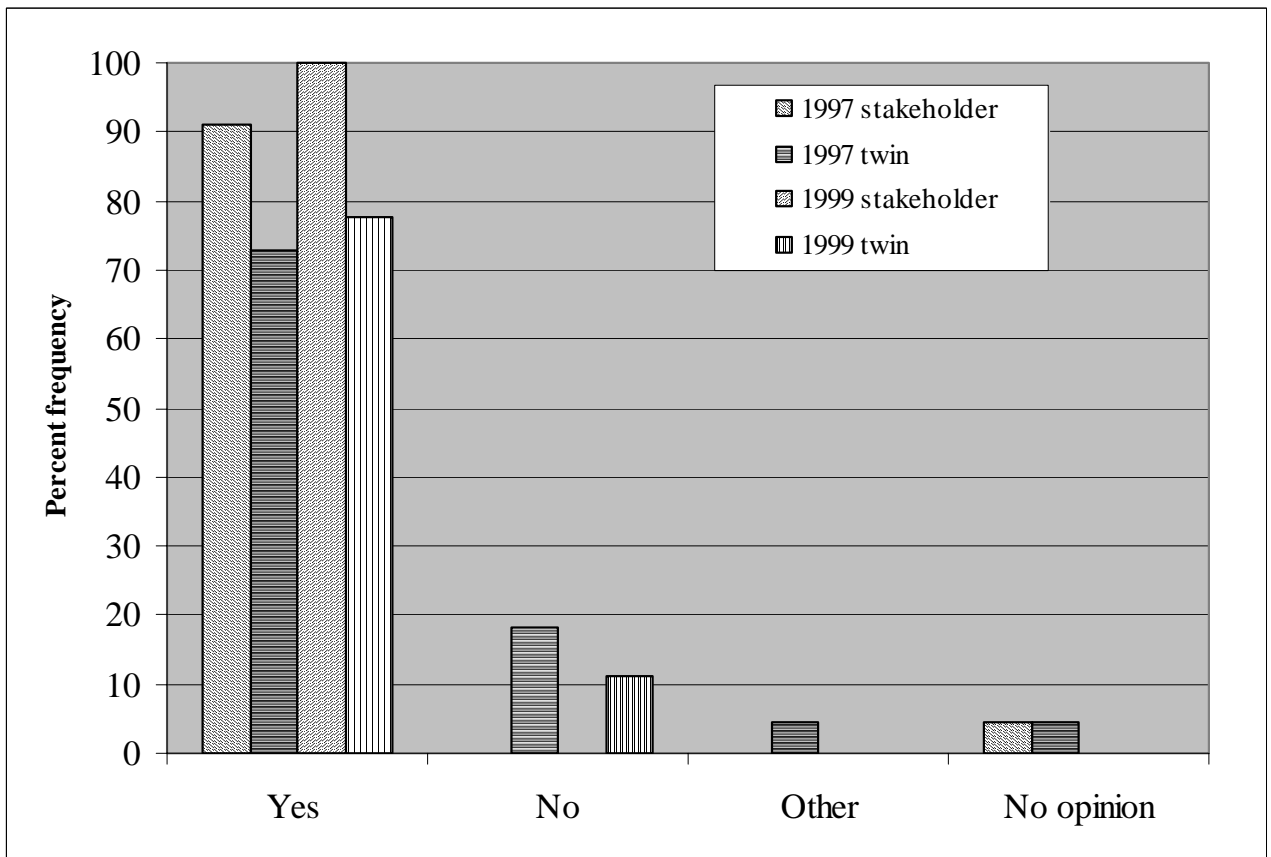


Figure E6. (Stakeholders). Why do you want changes in land use in the region?

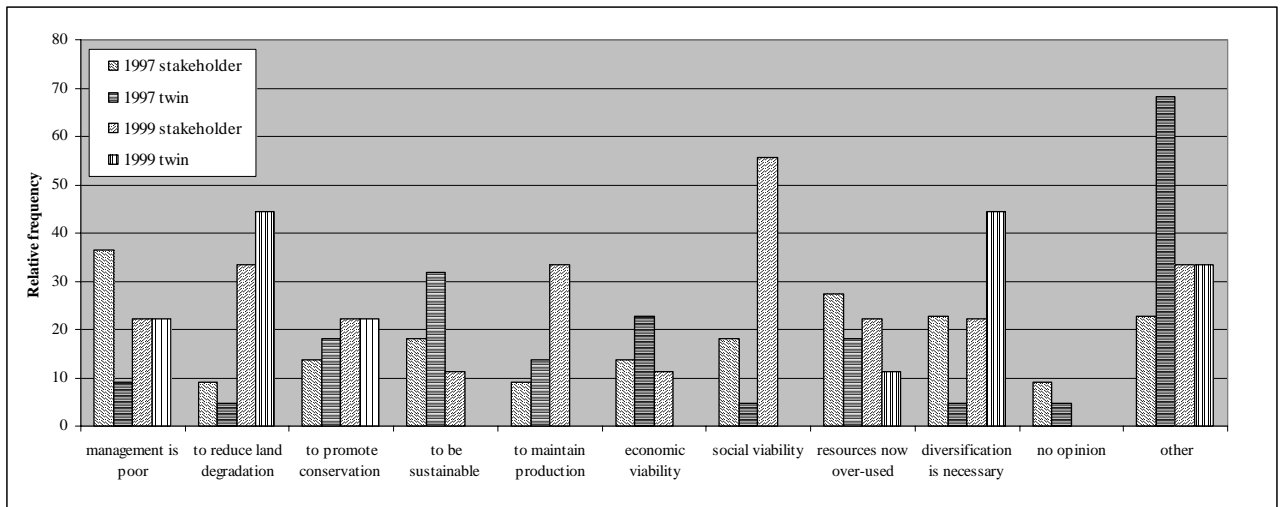


Figure E7. (Stakeholders). Is your stakeholder group able to influence land use in the Region?

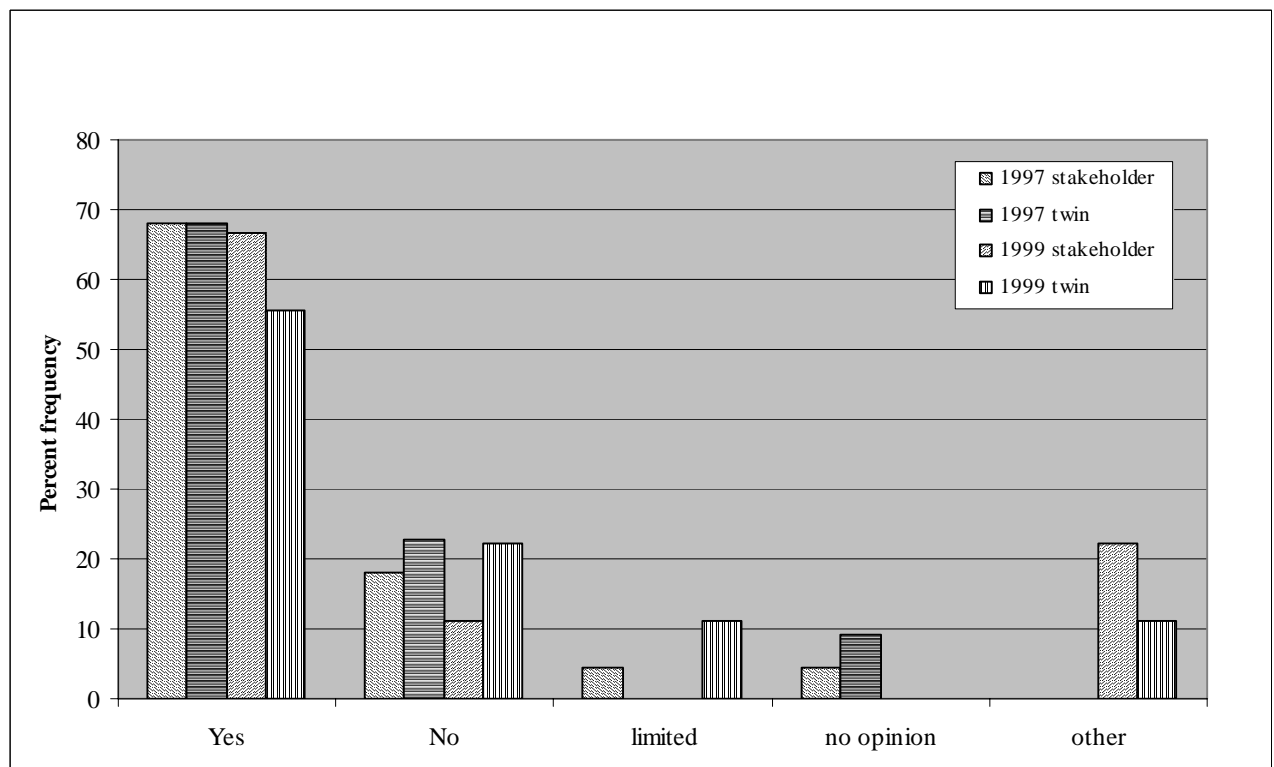


Figure E8. (Stakeholders). How do stakeholders influence land use?

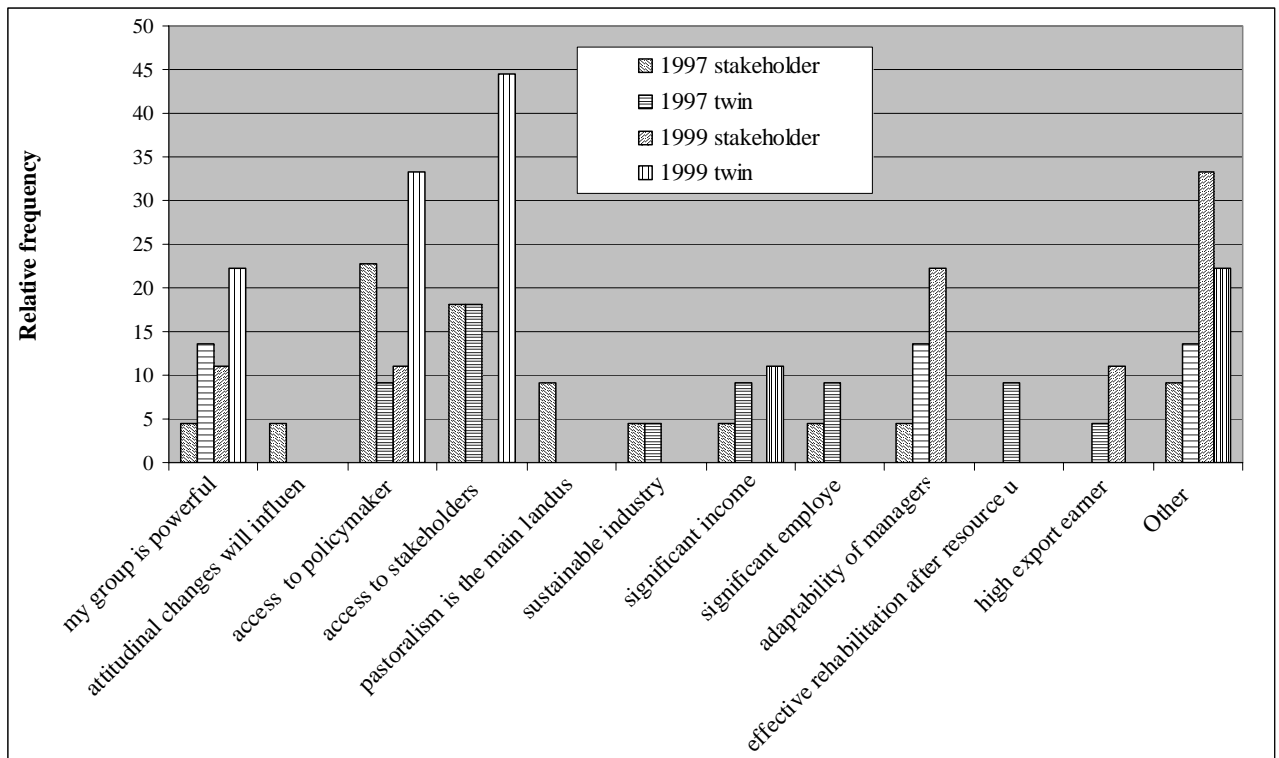


Figure E9. (Stakeholders). If land use in the region is to be used the way you want in the future what changes must occur?

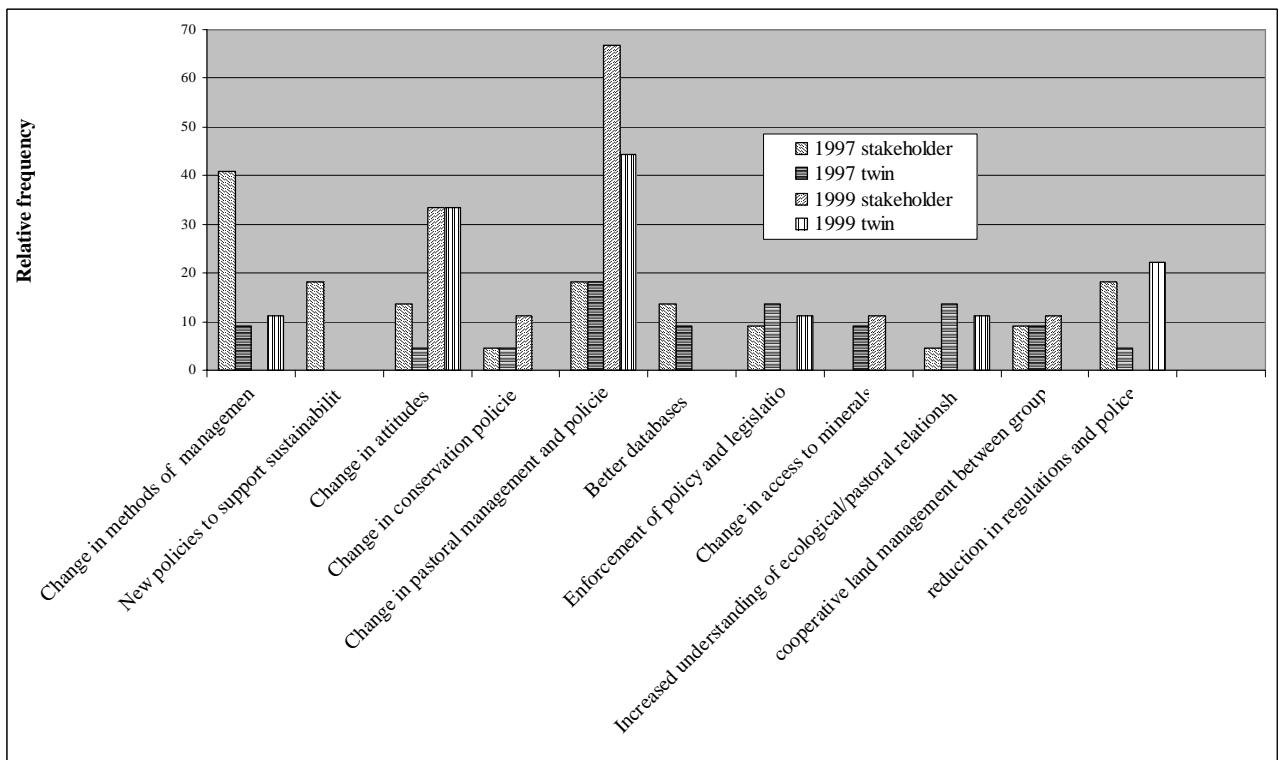


Figure E10. (Stakeholders). What would be the benefits of stakeholders' preferred patterns of land use?

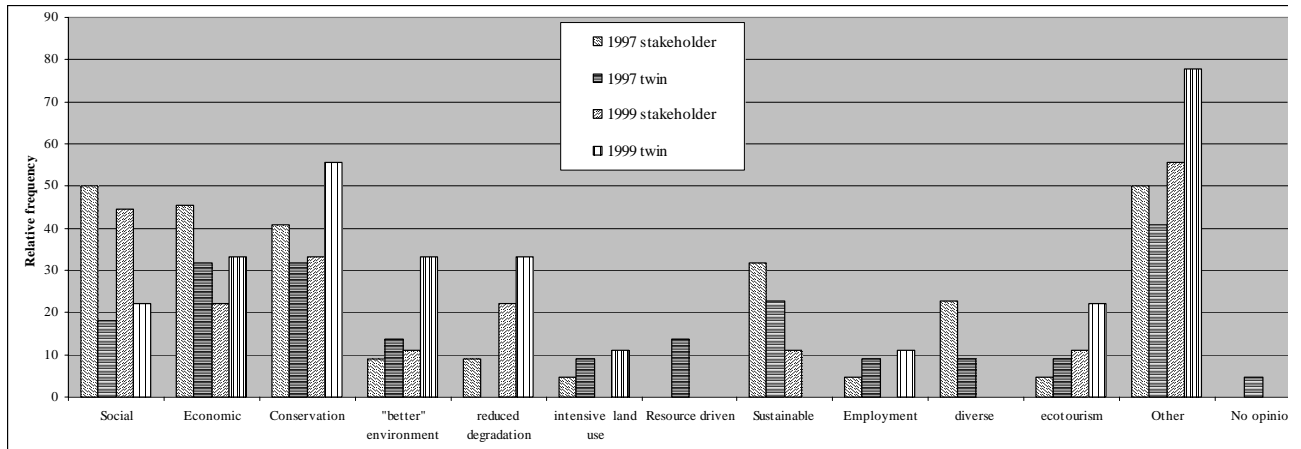


Figure E11. (Stakeholders). What would be possible costs of stakeholders' preferred patterns of land use?

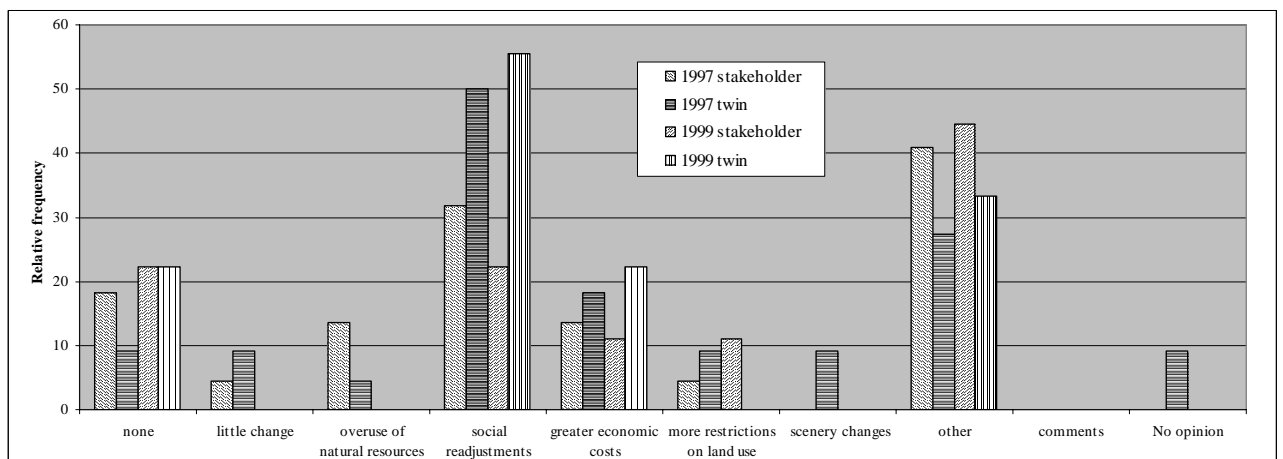


Figure E12. (Policy makers). What is sustainable land use?

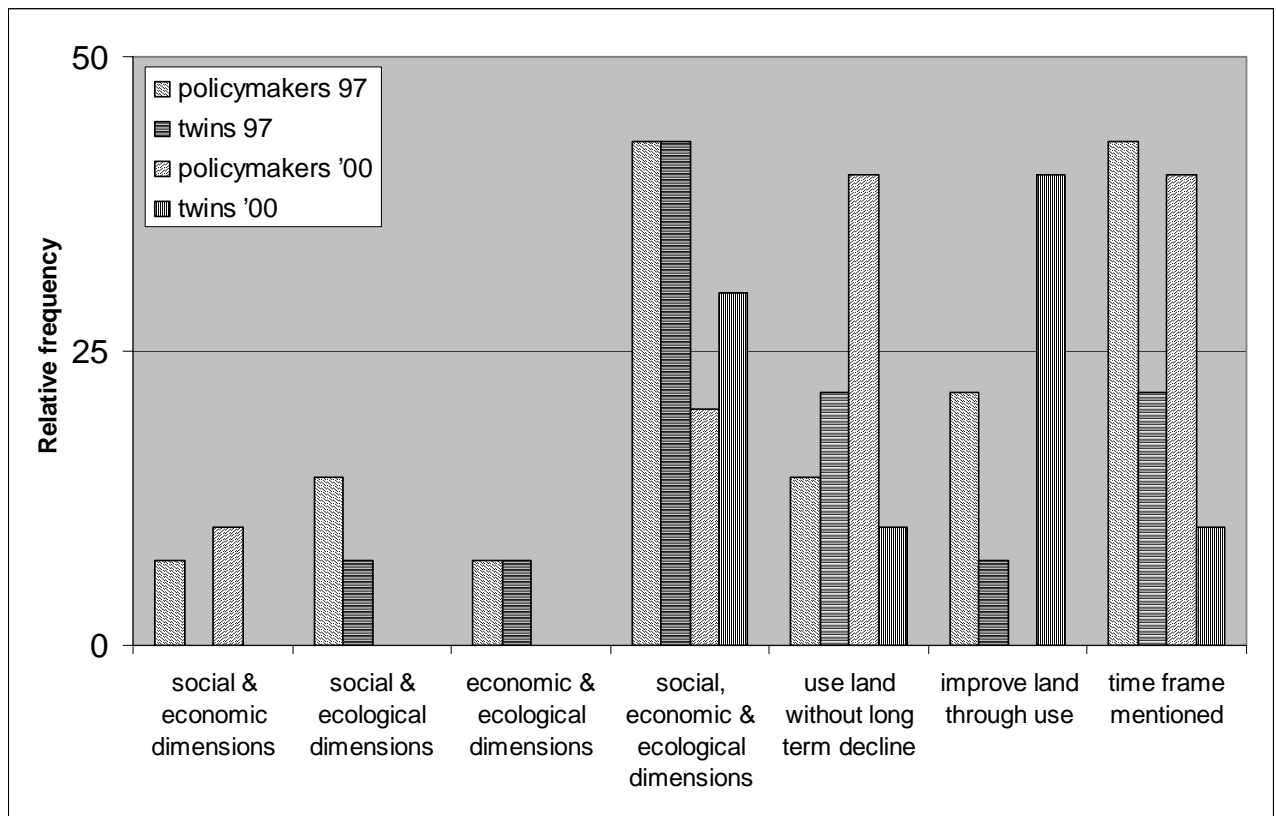


Figure E13. (Policy makers). What makes a regional pattern of land use sustainable?

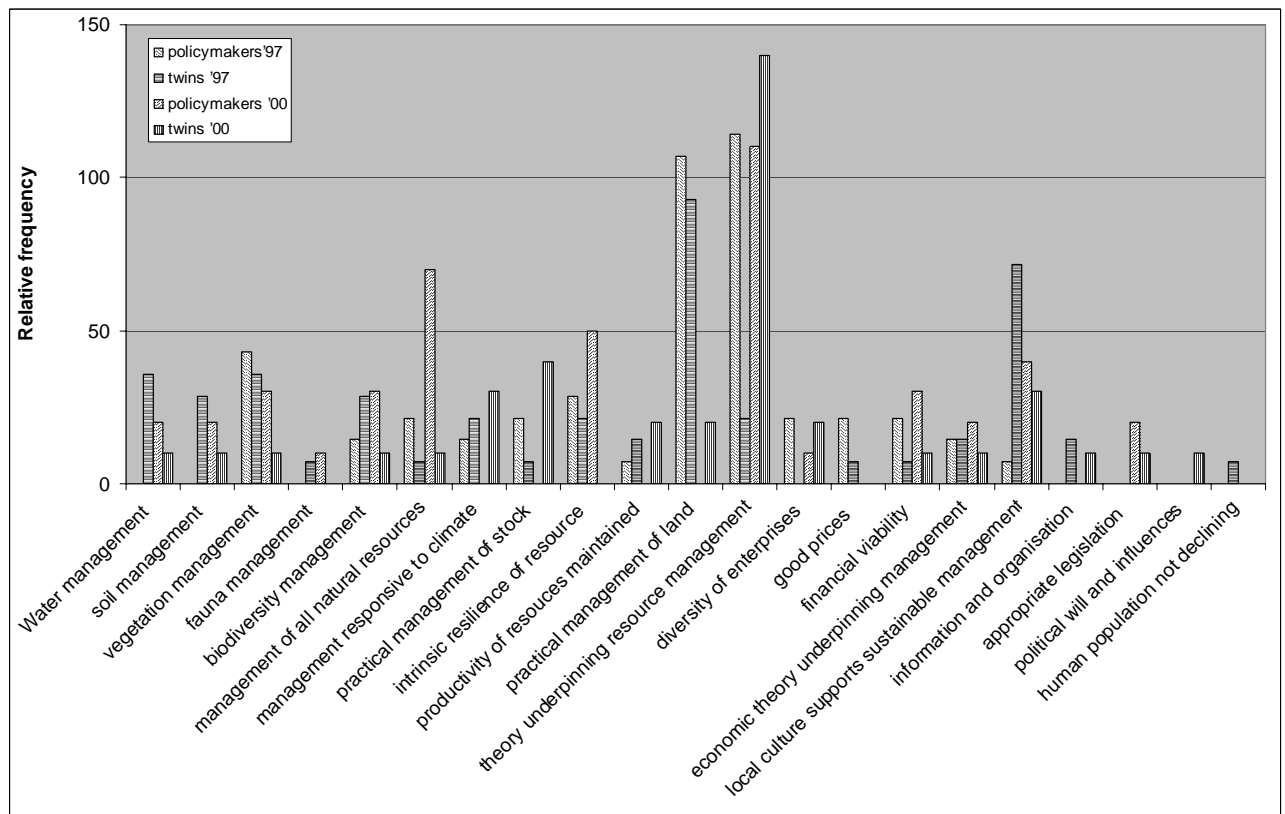


Figure E14. (Policy makers). Indicators to measure sustainability.

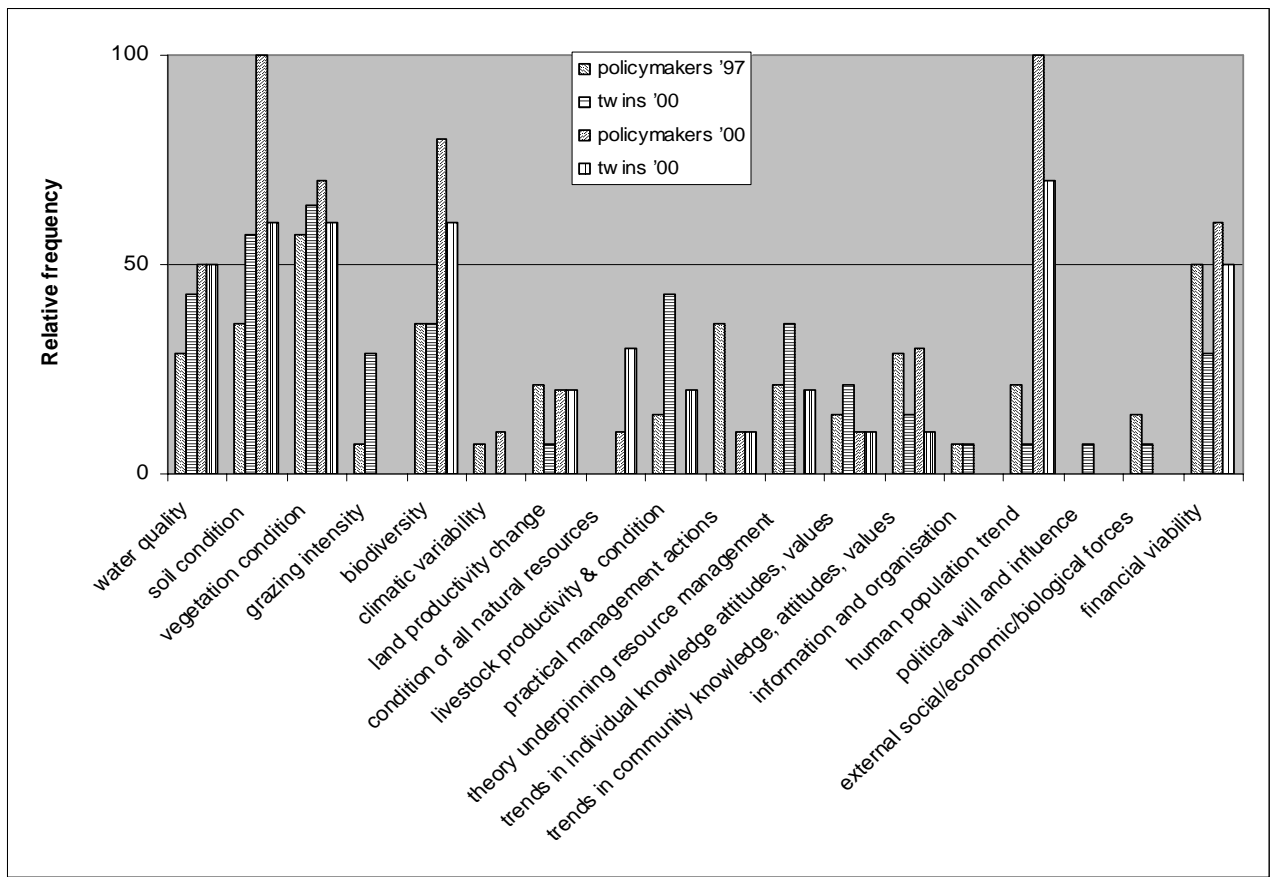


Figure E15. (Policy makers). How many years ahead do you look when considering sustainability?

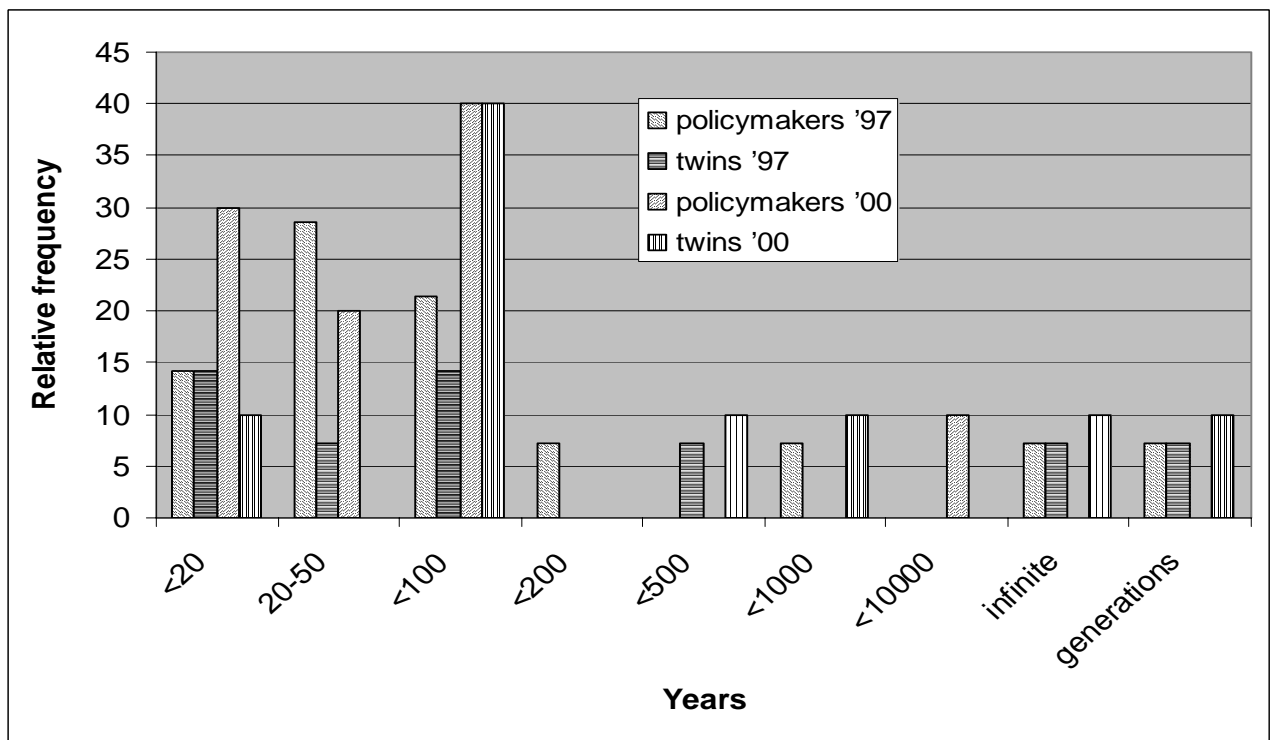


Figure E16. (Policy makers). What influences encourage change from unsustainable to sustainable land uses?

