

2008 – 09 COMMUNITY ENVIRONMENT AND SUSTAINABILITY STUDY: PRELIMINARY REPORT

Final report

July 2009

Peter Howard



TABLE OF CONTENTS

Acronyms used in this report	2
Executive summary	3
Key findings	3
Introduction	5
Background and definitions	5
Study Methods	7
Objectives	7
Study design	7
Survey instrument	8
Surveying	8
Results	8
response rate	9
Demographics	9
Recognition of NACC	11
Knowledge Attitudes Practices and Aspirations - inter-group Comparisons	12
Knowledge	12
Attitudes	13
comparison between farmers who do and do not belong to NACC	14
Knowledge scores (FARMERS who are and are not members of NACC)	15
Discussion	17
Limitations	17
Knowledge	18
Attitudes	18
Practices	18
Aspirations	18
SUSTAINABILITY: the social, economic and environmental	19
Conclusions	19
Appendix 1 comparison of the responses by the different sample groups	20
Appendix 2 Comparison of responses by FARMER and non-farmer members of nacc	23
Appendix 3: Results of attitude questions by database / shire	25
Appendix 4: Distribution of responses on questions 1-32	41
Appendix 5: Questionnaire	52

ACRONYMS USED IN THIS REPORT

CDI	Community Demonstration Initiative
DAFWA	Department of Agriculture and Food, Western Australia
DPI	Department of Primary Industries
KAPA	Knowledge, Attitudes, Practices, and Aspirations
MAT	Management Action Target
NACC	Northern Agricultural Catchments Council
NAR	Northern Agricultural Region
NRM	Natural Resource Management

EXECUTIVE SUMMARY

The study examined knowledge, attitudes, practices and aspirations among three sample groups in the NAR. Those groups were, Members of NACC, farmers, and non-farming residents in the NAR.

The single most salient finding was that NACC members scored better on measures of NRM literacy and were more likely to hold attitudes favouring better natural resource management than the other sample groups. In spite of findings which show NRM literacy is low among target audiences, engagement with NACC is associated with significantly higher levels of literacy.

This finding alone serves as a reminder that better understanding of NRM objectives is possible and that in the region NACC can claim some success in raising NRM literacy.

KEY FINDINGS

1. NACC membership is associated with respondents possessing greater knowledge of, and holding attitudes more positive to, NRM.
2. Beyond NACC members and Farmers, the general population remains poorly informed regarding what it is that NACC does. The highest awareness of NACC's role was, not surprisingly, among its members. While almost 70 per cent of farmers were able to correctly identify NACC's role only 40 per cent of non-farmer residents of the NAR could.
3. There is a discernable trend for farmers engaged with NACC to be more knowledgeable and to hold more positive NRM attitudes than non-member farmers.
4. With few caveats, NACC as an organization is recognised throughout the region.
5. Loss of biodiversity and environmental damage including overdevelopment of the coastal zone was a concern for all groups.
6. There was some support for environmental health being more important than the economy. However there also support for the opinion that environmental advocates do not understand the economic imperatives associated with land use
7. While most respondents wanted to see more native vegetation in the region, restrictions on land clearing were only mildly supported among the non farming groups.
8. . While less than half of all respondents understood what "biodiversity" meant, the majority of NACC members did, and the differences between groups was significant.

9. The term “biosecurity” was poorly understood by all groups although NACC members were significantly better informed than the other groups.
10. The term “sustainability” was poorly understood by all groups although just over half of NACC members were able to correctly define the term, a statistically significant difference.
11. Community involvement was valued by all groups although NACC members rated it more highly than the other groups
12. In general respondents were well informed regarding climate change and were aware of its consequences in the region.

INTRODUCTION

This report summarises data collected *2008-09 Community Environment and Sustainability Study*. The study was undertaken to gather baseline data on Knowledge Attitudes Practices and Aspirations (KAPA) of selected populations living in the Northern Agricultural Region (NAR) of Western Australia (WA) as well as providing the baseline for an evaluation of a social marketing campaign undertaken by NACC to address previously identified gaps in the knowledge of NRM concepts by key stakeholder groups.

BACKGROUND AND DEFINITIONS

Three earlier qualitative studies were used to inform the social marketing strategy and to validate development of the survey instrument used in this study. Initiatives to identify and address the human dimensions of NRM are set out in the NACC's overarching framework and in the program Logic for "Social Engagements" position.

The initial qualitative study consisted of a small number of key informant interviews conducted in preparation of the NACC Communications Strategy. The second qualitative study was larger and investigated farmers' knowledge of key concepts used in Natural Resource Management (NRM). Known as *The NRM Literacy Study*, it revealed the uptake of NRM innovation was potentially compromised by poor comprehension of NRM messages. Specifically the study found:

1. the terms "Natural Resource Management", "biosecurity", "biodiversity" and "sustainability" were poorly understood by farmers;
2. knowledge of these terms was often fragmentary;
3. these terms were only interpreted in relation to farming, i.e. there was no "big picture";
4. economic viability was seen as the single most important element of sustainability;
5. "biodiversity" was commonly confused with farm diversity; and,
6. NACC's role and function was poorly understood.

Recommendations from the NRM Literacy Study targeted improving the effectiveness of NACC's communications. In particular, it was recommended that NACC should:

1. alert State and Federal agencies and sponsors to the problems faced delivering appropriate outcomes while NRM Literacy remained low;
2. focus on improving comprehension of NRM and other embedded concepts among its target audience; and,
3. continue to monitor and improve its communication of NRM objectives to its principal stakeholder groups.

These recommendations were written into the Program Logic for the position of the Social Engagement / Human Dimensions manager (NACC document: *Program Logic for the use of Knowledge, Attitudes, Practices and Aspirations as Drivers of Sustainable Farming in the NAR*).

The Aspirational Target articulated in the Program Logic is:

... (A) community sensitised to the need to apply best resource management practices in all aspects of resource use in the NAR. Such practices will necessarily involve resource managers comprehending key

elements of NRM, possessing the skills to acquire that knowledge and translate it into practice, and having both the desire and the technical skills to do so.

Greater understanding for the need to actively seek, interpret and apply best practice in resource management was termed “NRM literacy” and a definition, adapted from public health, was developed for use in NACC programs:

The degree to which individuals possess the capacity to obtain, process, and understand basic NRM information and services needed to make appropriate NRM decisions.

Management Action Targets articulated in the Program logic for NACC’s Social Engagements / Human Dimensions role include specific mention of the importance of undertaking the study described by this report. Those targets are:

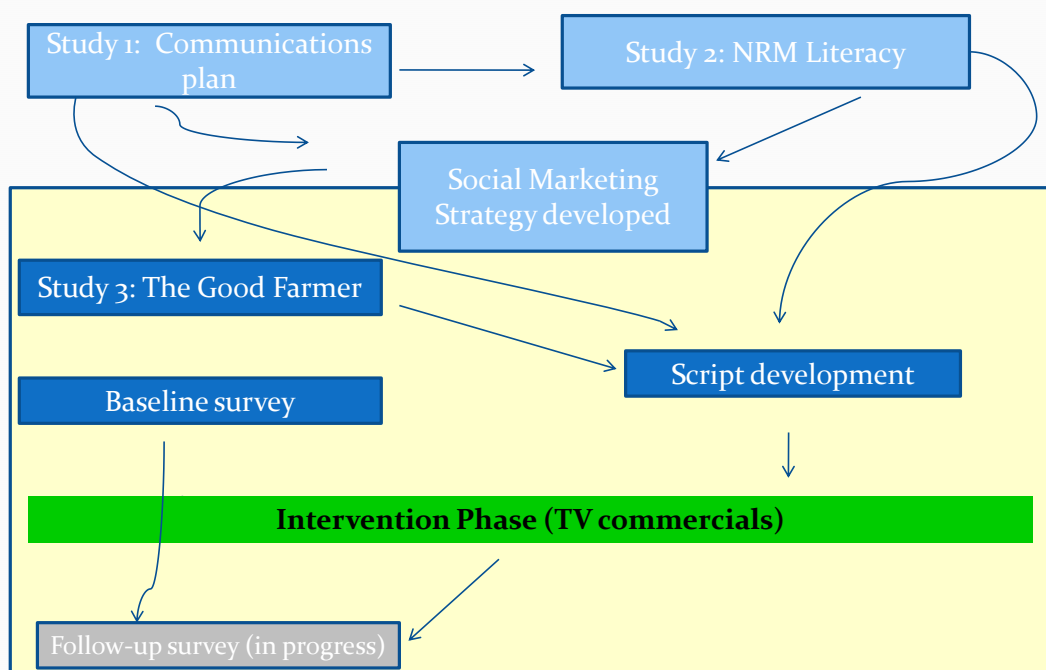
MAT1	NACC increase its organizational capacity to collect collate and integrate social data into program delivery
MAT 1.1	Develop instruments for collecting social data and to gather baseline data for the NAR
MAT 1.2	Develop a KAPA profile of resource users in the NAR
MAT 2.2.1 & 2.2.2	NACC addresses poor NRM Literacy via an evidence-based social marketing campaign
MAT 3	NACC clarifies ambiguities surrounding key concepts used in its programs
MAT 3.1	NACC commences a program of routine surveying of KAPA
MAT 4	The NACC management cycle be informed by valid and reliable social data

Further, the follow up survey, (in progress at the time of writing) will:

1. Gather additional baseline data on KAPA in the region (MAT 1)
2. Evaluate the social marketing intervention (MAT 4.1)
3. Both the baseline and study and the follow up study will inform day-to-day program delivery (MAT 4.2.1)

Following the development of the Communication Plan, completion of the NRM Literacy Study and the setting of Management Action Targets, a final qualitative study was conducted. The *Good Farmer Study* investigated the values of small group of wheat growers in the NAR. These results were used to develop television commercials used as part of the social marketing strategy (MAT 2.1.1). Figure 1 shows how the studies relate.

Figure 1: Project Flow Chart



STUDY METHODS

Overall the project used a mixed methods approach (qualitative, quantitative). A high degree of validity is claimed for the project because most results are observed using different methods (i.e., the study is methodologically triangulated).

OBJECTIVES

The Community Environment and Sustainability Study has three objectives:

- 1) assay KAPA of identified groups in the NAR;
- 2) compare KAPA of participants exposed to NACC programs and those who were not; and
- 3) gather baseline data on knowledge of key concepts prior to a television advertising campaign.

STUDY DESIGN

The study comprised of a self-completed questionnaire mailed to three groups of residents of the NAR. They were members of NACC, farmers and non-farmers.

The samples for the three groups were derived from multiple databases. They were: the ratepayer databases of nine participating shires/councils; a database of farm properties in the NAR; and, NACC's membership list. Victoria Plains wanted to participate however their ratepayer database was structured differently to the other shires and unsuitable for inclusion in the sample frame. The lists were matched and duplicates discarded.

Farmers are seen as NACC's principal target audience. Members of this group were oversampled to ensure there was sufficient representation to enable meaningful statistical analysis. The resulting sample does not represent the total population of the NAR. However, each of three sub-groups are representative of their group: farmers; non-farming residents; and NACC members.

SURVEY INSTRUMENT

Three previous qualitative studies were used to validate and develop the questionnaire.

The final questionnaire sought information on a total of 48 items: Questions designed to gather data on: knowledge of NACC and key concepts (6 questions), attitudes (25), practices (3) aspirations (2), and demographics.

The attitudinal questions sought information on: NRM and biodiversity (8), community involvement (5), the economy (2), climate change (7) and topical issues (3).

The questionnaire was pretested in Geraldton (N=92), prior to mail out. (See appendix 4)

SURVEYING

The questionnaire was mailed to the person whose name appears first on the property ownership databases. This biased the sample strongly towards male recipients. In an attempt to redress this, a statement appeared on the questionnaire requesting that the person, who is a resident of the household, 18 years or over whose birthday falls next in the year should complete the questionnaire.

The questionnaire also included a prepaid return envelope. Two weeks after the initial mail-out, those who had not returned the questionnaire were sent a reminder in the form of a postcard. This was followed by a final reminder and a new copy of the questionnaire two weeks later. The study commenced in November 2008 and the final cut off for returned surveys was 1st February, 2009

As an incentive a small gift was offered to all study participants and a prize of a weekend at a Perth motel was drawn from those who completed the survey.

RESULTS

After data entry and coding there were 82 variables in the dataset. Analysis was limited to an examination of those variables and themes that would: serve as a baseline for the forthcoming social marketing campaign; assist NACC in its strategic decision making; inform those shires and others who granted access to their ratepayer and member databases; and, to assist NACC assess elements of the human dimensions of its NRM as part of its current programs.

Detailed breakdowns and raw results are given in appendices.

All information was coded and entered using EpiInfo. The SPSS software package was used for statistical analysis.

RESPONSE RATE

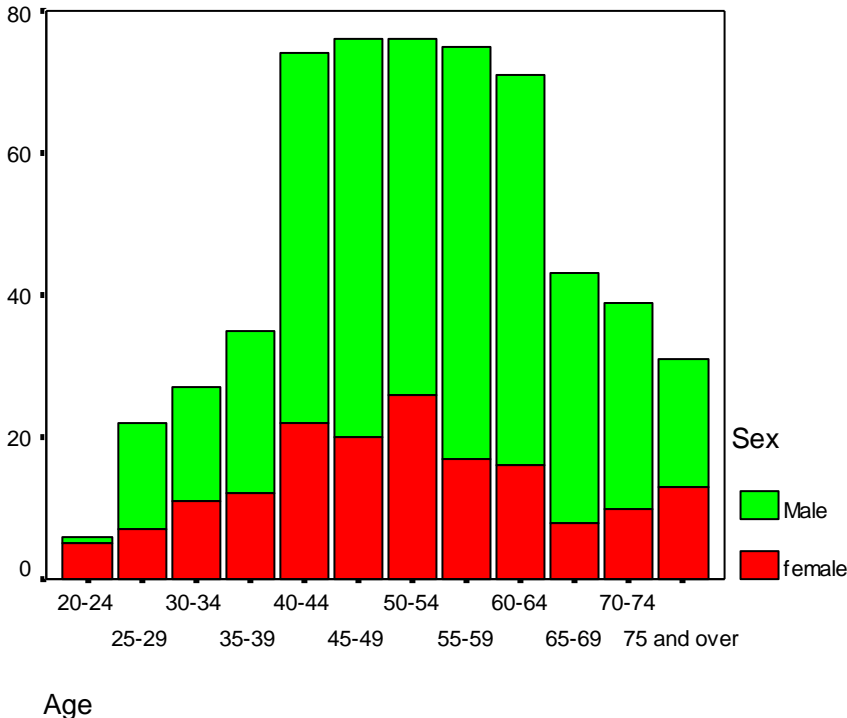
A total of 1495 surveys were mailed. A large number of invalid and defunct addresses were present in the property databases, when these were identified and removed from the sample the number of possible recipients fell to 1243. In all 602 completed or partially completed surveys were returned giving a response rate of 48.4%

DEMOGRAPHICS

AGE AND SEX

The average age of all participants lay in within 50 to 54 years. Differences in ages between male and female respondents were small. For men, the average age lay in the same grouping and for women the average age lay between 45 to 49 year (see Table 1).

Table 1: Age distribution



Considerably more men (68.1%) than women completed the questionnaire. This was an unusual result: even when attempts are made to randomly select participants from households, as was the case in this study, it is common to find a more women than men complete surveys. This may have occurred because property

databases typically give male names first if the property is held in joint names or because the survey was related to land management which some see as a male responsibility.

Table 2: Sex

Sex	Frequency	Percent
Female	170	28.2
Male	410	68.1
Total	580	96.3
missing	22	3.7

TIME IN REGION

One respondent reported living in the region for 82 years and three respondents reported one year. The median number of years was 29 years and the mean 29.4 years.

EDUCATION

Participants were asked to state their highest level of schooling. A quarter (25.4%) reported completing some high school only, a further quarter (24.9%) finished high school. More than one in ten either completed a TAFE and/or other training course a (14.0%) or a University degree (12.0%) (see Table 3).

Table 3: Level of education

Level of education	Frequency	Percent
Some high school	153	25.4
Finished high school	150	24.9
Some education after High School	111	18.4
Completed TAFE or other training course	84	14.0
Studied at University	20	3.3
Completed a University degree	72	12.0
Total valid	590	98.0
missing	12	2.0
	602	100.0

DOMESTIC ARRANGEMENTS

Of those respondents choosing to answer the question on living arrangements (N=564) the vast majority (87.3%) lived with others and almost a third (31.4%) lived with children under the age of 15 years old.

DWELLINGS AND FARMS

More than half of respondents (52%) lived on farms, a further one-tenth (11%) lived on “blocks out of town”. The remainder (37%) lived in houses in town or flats or at caravan parks). Some respondents (n = 18) described their dwellings as “other” and gave a description. These were re-coded into the categories presented in the table below.

There were differences in the way respondents identified “farms” and “blocks”. A small number of respondents (n = 9) living on properties ranging in size from 30 to 60ha describe their dwellings as “farms” and four respondents living on properties between 100 and 4013ha describe their dwellings “a house on a large block out of town”.

Question 45 asked respondents to indicate their dwelling type. The average property sizes for all properties that were indicated as “farms” and “blocks out of town” are 4236 and 140 hectares respectively.

There was some fluidity around the concept of “farm” and “block”: eight respondents indicated they lived on a farms between 2 and 25 ha while four lived on “blocks out of town” that were between 80 and 160, 000 ha (see Table 4).

Question 40 asked if respondents if they owned or managed a farm. The average size of properties for those respondent answering question indicating they owned or managed a farm and subsequently describing that property as either a “farm or “block out of town” (Question 45) was 4194ha and 150ha respectively.

Table 4: Type of dwelling by participant

Dwelling Type	Frequency	Percent
Farm	311	51.7
House close to town	212	35.2
House out of town on block	67	11.1
Flat	6	1.0
Other (caravan parks etc.)	2	.3
missing	4	.7
TOTAL	602	100.0

RECOGNITION OF NACC

Participants were asked to indicate from a list on nine organisations those they recognized. One of the options was the “Northern Agricultural Catchments Council”.

Better than two thirds (71%) of respondents indicated they knew of NACC. While this was a considerable improvement on previous surveying, it should be noted the introductory letter accompanying the survey and follow up mail all contained references to NACC. Furthermore, of the nine options, one was fictitious, namely,

the “Department of Transport and Mining Council.” This “organisation” was “recognised” by more than half (54%) of respondents. Some caution is therefore advised in interpreting this result.

KNOWLEDGE ATTITUDES PRACTICES AND ASPIRATIONS - INTER-GROUP COMPARISONS

To meet the objectives of comparing KAPA between different stakeholder groups within the NAR and to examine the role NACC membership plays in attitudes and the acquisition of knowledge related to better NRM practices, respondents were separated into three separate categories

Those respondents describing themselves as “owning or managing farms” (Q40) and those indicating their dwelling was a farm (Q45), irrespective of size, are categorized as farmers. Those living in flats, long stay caravan parks and houses in or close to town are categorized as town residents. Those selected from the NACC member database are considered NACC members, irrespective of where they live.

- 1) **Farmers** - this included all respondents contacted using the DAFWA property database as well as those respondents who indicated they owned, managed or lived on a farm (Question 40) and those who indicated their residence was a farm (Question 45). It excluded farmers who were also members of NACC
- 2) **NACC members** - this included all respondents contacted via the NACC membership list, irrespective of whether they lived on a farm or not
- 3) **Non-farmers** - all other respondents contacted via the ratepayer databases supplied by the shires and councils participating in the survey.

Table 5: Frequency of each respondent grouping within the sample

Respondent group	Frequency	Percent
Farmer	334	55.5
NACC member	83	13.8
Non-Farm	185	30.7
Total	602	100.0

For the following analysis the three previously identified groups, NACC members, Farmers and Non-farming residents of the NAR are examined for similarities and differences in KAPA.

KNOWLEDGE

Knowledge scores relate to those question which asked respondents to indicate what they understood the “biodiversity”, “biosecurity”, “sustainability” and knowledge of NACC’s function.

Knowledge of key concepts was scored as a “1” for incorrect and “2” for correct. The mean scores represent the average score for the group. While some respondents ticked more than one or all options or added the comments “all of the above” only those indicating the correct response and no other were scored as correct. A summary of these scores is set out in Table 8.

BIODIVERSITY

Two thirds of NACC members (62.7%), under a half of farmers (44.0%) and one third (33.1%) of non-farmers indicated the correct response. Between group differences were significant (Pearson’s Chi-Square, $p = .000$, ANOVA, $p < .05$).

BIOSECURITY

Almost half NACC members (48.2%), more than a third of farmers (37.1%) and a quarter of non-farming respondents (24.9%) indicated a correct response. With the exception of members and farmers between group differences were significant (Pearson's Chi-Square, $p = .000$, ANOVA, $p < .05$).

SUSTAINABILITY

Better than half NACC members (56.6%), and equal proportions of farmers and non farmers (39.2% and 42.4% respectively) indicated a knowledge of sustainability. With the exception of farmers and non-farmers between group differences were significant (Pearson's Chi-Square, $p = .000$, ANOVA, $p < .05$)

RECOGNITION OF NACC'S FUNCTION

Not surprisingly the vast majority of NACC members (85.5%) indicated a correct knowledge of NACC's function, compared with two thirds of farmers (66.8%) and better than a third (38.5%) of non farming respondents. The difference between all groups was significant (Pearson's Chi-Square, $p = .000$, ANOVA, $p < .05$)

Table 6: Indicators of knowledge by respondent group

CATEGORY	Farmer			NACC member			Non-Farmer			Total		
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD
Biodiversity	1.55	334	0.49	1.37	83	0.48	1.67	185	0.46	1.56	602	0.49
Biosecurity	1.62	334	0.48	1.51	83	0.50	1.75	185	0.43	1.65	602	0.47
Sustainability	1.60	334	0.48	1.43	83	0.49	1.58	185	0.49	1.57	602	0.49
NACC	1.33	334	0.47	1.14	83	0.35	1.62	185	0.48	1.39	602	0.48

ATTITUDES

A full breakdown of attitudes by group is presented in Appendix 1. The following section groups the attitudinal elements into subthemes and, where appropriate, incorporates items into a scales. Those sub themes are: environment attitudes, NRM and biodiversity, community involvement, the economy and climate change.

THEME 1: ENVIRONMENT AND NRM

A score for attitudes towards the environment and NRM initiatives was calculated by collating the scores for questions 1, 2, 3, 4, 7, 9 and 18 (Environment and NRM Scale) with Likert scores being reversed for questions 7

and 9. Only those respondents who indicated preferences to all questions were included in the count. Scale components showed a high degree of relatedness (alpha co-efficient = .811).

NACC members recorded the highest means on the Environment and NRM Scale and farmers the lowest. Differences between all groups were significant (see Table 8).

Table 7: Group by Environment and NRM Scale

Sample group	Mean	N	SD
NACC member	44.09	82	11.25
Non-Farm	41.37	177	9.66
Farmer	36.95	327	10.48
Total	39.29	586	10.69

THEME 2: MANAGEMENT OF NATURAL ASSETS - COASTLINE AND AGRICULTURAL LANDS

Without significant differences all groups indicated agreement with the statement that coastal WA was in danger of being over developed (grouped mean= 6.24). Similarly all groups indicated mild disagreement with the statement that “WA’s natural environment... is well managed” (grouped mean = 4. 78)

NACC members were significantly more likely to agree that “management of coastal areas will benefit me personally”, than were non farmers and farmers (ANOVA, $p = 0.26$). All groups indicated support for the statement that better management of agricultural lands would benefit the community.

THEME 3: COMMUNITY

Items relating to the community (questions 10, 12, 13, 14 and 16) appeared moderately linked (Alpha = .58). NACC members scored significantly higher on the community scale than farmers and non farmers (ANOVA, $p = .001$, $p = .000$) while there were no statistical differences in scores between the latter groups.

THEME 4: PRACTICE CHANGE

There were three items relating to behavioural change (questions 20, 27 and 28). The items showed only moderate association (Alpha = .55) and no significant differences between groups.

THEME 5: CLIMATE CHANGE

On all but one item NACC members responses indicated significantly greater awareness of climate change and its impacts (see Table 8). The exception was the statement: *Conflicting information about climate change makes it hard to know whether it is actually happening.* (see Table 8)

COMPARISON BETWEEN FARMERS WHO DO AND DO NOT BELONG TO NACC

Of the 83 NACC members in the sample, 46 described themselves as farmers.

There were few significant statistical differences in attitudinal and knowledge scores between member and non-member farmers (see Appendix 2). However, on all mean scores bar two (highlighted in table, Appendix 2) indicate that those farmers who were members of NACC held attitudes more positive to NRM objectives than

non-member farmers. This result in itself is of importance. A larger sample of NACC affiliated farmers would quite possibly revealed these differences to be significant.

Table 8: Comparisons of attitudes on climate change between groups¹

Item	Non-farmer resident			NACC member			Farmer			Total			P - value
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD	
I believe that human activities are affecting the climate now.	6.56	183	2.33	7.1	82	2.08	6.15	333	2.18	6.41	598	2.24	.001
Adapting to climate change will bring business opportunities to my community.	5.07	182	2.04	5.79	81	2.04	5.02	330	1.92	5.14	593	1.99	.006
Climate change does not affect me directly.	4.28	183	2.27	3.22	83	2.04	3.88	330	2.39	3.91	596	2.33	.002
Adapting to climate change will hurt my community.	6.82	181	2.02	7.04	83	1.81	6.57	332	2.07	6.71	596	2.02	.118
I believe human activities affect the climate beyond the cycle of droughts that occur naturally in Australia.	5.98	183	2.22	6.37	83	2.06	5.57	332	2.17	5.81	598	2.19	.005
Climate change is not a real problem.	3.71	182	2.54	3.01	83	2.07	3.82	331	2.25	3.68	596	2.33	.017
Conflicting information about climate change makes it hard to know whether it is actually happening.	6.25	183	2.4	6.19	83	2.31	6.61	332	2.27	6.44	598	2.32	.137

¹The means were for scores on the 9 point Likert scale where scores of 1 indicated strong disagreement, a score of 5 represented neither agreeing or disagreeing and a score of 9 indicated strong agreement.

KNOWLEDGE SCORES (FARMERS WHO ARE AND ARE NOT MEMBERS OF NACC)

Knowledge scores relate to those question which asked respondents to indicate what they understood the “biodiversity”, “biosecurity”, “sustainability” and knowledge of NACC’s function.

BIODIVERSITY

The majority of farmer members of NACC (57.4%) identified the definition closest to the model definition of “biodiversity” whereas under half of non-member farmers (44.0%) did so. However this difference fell below statistical significance (Pearson’s Chi², p = 0.083).

BIOSECURITY

More NACC-member farmers identified the option closest to the model definition of “biosecurity” (46.8% compared to 37.1% for non farmers). Again this difference was not significant (Pearson’s Chi², P= .201)

SUSTAINABILITY

Better than half of member farmers (51.1%) correctly identified the response closest to the model definition of “sustainability”. While considerably fewer (39.2%) non-member farmers made the correct choice the difference was not significant (Pearson’s Chi², p = .122)

RECOGNISING THE ROLE OF NACC

In general both farming members of NACC and farming non members displayed a sound recognition of the role of NACC (87.2% and 66.8% respectively) although the differences between the two groups was significant (Pearson’s Chi², = .004)

SUMMARY

Again, on questions of knowledge members of NACC who were farmers were better informed than non member farmers although with the single exception, recognition of NACC’s role, these difference fell below statistical significant.

These differences would likely become significant if greater numbers of farmer members were recruited for the study.

DISCUSSION

The single most salient finding was that NACC members scored better on measures of NRM literacy and were more likely to hold attitudes favouring better natural resource management than the other sample groups. In spite of findings which show NRM literacy is low among target audiences, engagement with NACC is associated with significantly higher levels of literacy. This finding alone serves as a reminder that better understanding of NRM objectives is possible and that in the region NACC appears successful in raising NRM literacy.

There is still work to be done. Although most people were concerned about the loss of biodiversity and wanted to see more native vegetation in the area, there is still support for ongoing land clearing. This will remain a barrier to current and future wind erosion programs

For the foreseeable future farmers will remain the target audience for the NRM messages and initiatives being delivered in the NAR. As the majority of this group is close to retirement there will be a need to ensure messages address both the needs of groups preparing to leave farming and those younger farmers who either entering farming or are taking over family farms. This population will also be in flux and many messages may need to be reinforced to ensure they continue to their target audiences.

The economic circumstances of these groups will also change as some farmers prepare to leave their properties while others will seek to build equity on the properties recently acquired or taken over. To maintain their currency NACC programs will need to offer options reflecting these changed circumstances

Most attitudinal questions in the survey elicited a broad range of responses. Most questions also recorded significant differences between the three sample groups targeted in the survey. These results suggest the survey instrument possessed high degree of validity and was sensitive enough to detect attitudinal differences between subgroups living in the NAR.

LIMITATIONS

There were considerable difficulties faced in gathering and integrating the databases used in the study. Ratepayer databases often listed property owners not resident in the NAR. Many individuals were listed on different databases with their names appearing differently (e.g., Bill John Smith, William J Smith, W.J. Smith, and so on). While considerable attention was paid to eliminating duplicates, some went undetected. Participants who returned surveys typically notified us that they had received more than one questionnaire. However the overall response rate may have been further artificially lowered because there were an unknown number of duplicates among non-respondents.

Another factor was the predominance of male respondents. Surveys seeking to randomly select a person from a household usually record a greater number of female respondents, i.e. women are more likely to participate in surveys. A change in proportions of women to men completing the survey, as occurred here, may be associated with lower response rates

These factors, in part, may explain why a methodology which commonly returns a response rate of around 70 per cent only succeeded achieving 48 per cent.

KNOWLEDGE

NACC membership was positively associated with greater knowledge of key concepts NRM.

In themselves these results do not conclusively support the case that engagement with NACC results in higher levels of NRM literacy. It is not possible to conclude that members attain higher levels of NRM literacy because of their involvement with NACC or whether those with better NRM knowledge and awareness are drawn to NACC because it offers the opportunity for positive participation in NRM programs. However, In the past NACC has directed a considerable portion of its efforts and resources to programs encouraging changing farm practices, That is to say, farmers are typically seen as NACC's primary target audience. That a clear majority (close to 70 per cent) of farmers but only a minority (40 per cent) of non-farmer residents were able to correctly identify NACC's role, supports the case that engagement has led to positive changes in stakeholder NRM knowledge.

Further analysis of, and reflection on, NACC's relationships with its stakeholder groups will likely enable the direction of this association to be determined.

ATTITUDES

Again NACC membership was associated with more positive attitudes to NRM. NACC members placed higher values on community involvement; are better informed on NRM matters; display greater awareness of climate change; show greater concern for biodiversity and land management including the coastal zone, than the other groups in the survey. These results are also reflected in the differences in scores between farmers who were NACC members and those farmers who were non-members.

As with the association between NACC membership and knowledge these results do not conclusively point to a causal relationship, however, the finding that an association with NACC leads to a greater understanding of its function can be used again support the case that engagement has a positive influence on NRM related attitudes.

PRACTICES

All groups indicated making an effort to reduce their impact on the environment and to leave it better than they found it. Although farmers were less likely to report using their car less in the last 12 months this may merely reflect the realities of living out of town rather than a lack of desire to reduce their carbon footprint. Again NACC members were more likely to have changed practices than the other groups.

ASPIRATIONS

Overall respondents indicated: a desire to see more vegetation in the region; concern with overdevelopment of the coastal zone; a preference to leave the environment in better condition; a need for better management of the environment including agricultural lands; and, desire for governments, businesses, and farmers to better look after the environment. None of the groups felt WA's environment was well managed.

These results strongly suggest respondents wanted an improvement in the way WA's natural resources were managed.

For respondents the future would see the region better vegetated and its biodiversity maintained. There would be constraints on development in coastal zones and developers, farmers, business and governments would take greater responsibility for management of the environment in the NAR. These findings reflect concordance with the aspirational target articulated in the program logic developed for the Human Dimensions role (see p., 3-4).

SUSTAINABILITY: THE SOCIAL, ECONOMIC AND ENVIRONMENTAL

The more common definitions of sustainability incorporate the social, economic and environmental dimensions. Questions in the survey sought responses on a range of topics measure individually these facets of sustainability

SOCIAL

Respondents reported an attachment to their community and recognised the link between better management of the environment including agricultural lands, and community wellbeing. There was a general belief climate change would negatively impact of a respondent's community and little support for the notion that adapting to climate change would bring benefits.

ECONOMIC

The perceived trade off between the economy and the environment was more complex. A healthy environment was seen as mildly more important than a strong economy and while there was a desire for better management of the environment, farmers opposed bans on land clearing and were in favour of being able to clear land belonging to them, presumably because it offered some economic benefit.

ENVIRONMENT

A healthy, even an improved environment, was seen as a positive for all groups. Although "biodiversity" was not universally understood the continued loss of Australian fauna was a strong concern for all groups.

CONCLUSIONS

There is good reason to believe these results are an accurate reflection of the NRM-related KAPA for residents, farmers and NACC members living in the NAR. These data can confidently be used as a baseline for evaluating the recently completed social marketing campaign as well as other NACC sponsored initiatives.

Analysis of the soon to be completed follow survey up will incorporate these findings and may prompt a return to these data for further analysis.

APPENDIX 1 COMPARISON OF THE RESPONSES BY THE DIFFERENT SAMPLE GROUPS

Table 9: Means for sample groups

CATEGORY	Farmer			NACC Member			Non-Farmer			Total			
	Mean	N	SD	Mean	N	SD	Mean	N	SD	Mean	N	SD	
The continued loss (extinction) of animals concerns me	6.90	332	1.88	7.63	82	1.76	7.57	184	1.56	7.21	598	1.8	.000
I would like to see a complete halt to land clearing.	4.24	333	2.68	5.61	82	2.82	5.35	182	2.4	4.77	597	2.68	.000
I would like to see more trees and native vegetation in the region.	6.66	332	1.87	7.6	82	1.84	7.29	183	1.65	6.98	597	1.84	.000
Protecting the environment is more important than a strong economy.	5.05	333	2.01	5.88	82	2.07	5.56	182	1.8	5.32	597	1.98	.000
Farmers should be allowed to grow genetically modified crops if it helps continue farming.	5.73	331	2.86	5.07	82	2.68	5.19	183	2.76	5.47	596	2.81	.045
Coastal Western Australia is in danger of being over-developed.	6.17	333	2.44	6.39	82	2.44	6.3	183	2.26	6.24	598	2.39	.689
Farmers should be allowed to clear the land that belongs to them.	6.08	331	2.44	4.29	82	2.61	5.7	183	2.42	5.72	596	2.52	.000
On balance WA's natural environment (coastline rivers soils water and land) is well managed.	4.91	332	2.01	4.35	81	2.07	4.73	182	1.93	4.78	595	2	.072
Conservationists and 'greenies' don't realise how important the economy is to our survival.	6.51	333	2.14	5.45	82	2.41	5.85	182	2.25	6.16	597	2.25	.000
There is a strong sense of community in the place where I live.	6.91	333	1.82	6.67	82	1.87	6.62	183	1.96	6.79	598	1.87	.197

CATEGORY	Farmer			NACC Member			Non-Farmer			Total			
Better management of coastal areas will benefit me personally.	4.84	333	2.18	5.61	82	2.32	5.05	182	2.11	5.01	597	2.19	.016
I am very involved in my community (e.g. sports service clubs volunteer organisations etc)	6.2	333	2.24	7.07	82	1.8	5.8	183	2.34	6.2	598	2.25	.000
My community will suffer if the environment is not looked after.	6.72	333	1.84	7.68	82	1.39	7.05	182	1.72	6.95	597	1.77	.000
I would like to do more work in my community but I'm too busy.	6.19	332	2.03	6.41	82	1.85	6.06	181	1.97	6.18	595	1.99	.396
Governments should do more to look after the environment.	6.57	330	1.89	7.36	81	1.46	6.81	182	1.78	6.75	593	1.82	.002
Better management of agricultural lands will benefit my community.	7.01	331	1.79	7.49	82	1.64	6.97	182	1.67	7.06	595	1.74	.058
I support immigration programs that bring more people to regional Australia.	4.68	332	2.53	5.14	81	2.53	4.19	183	2.57	4.59	596	2.55	.013
Businesses including farmers and developers must do more to look after our natural environment and wildlife.	6.54	331	1.93	7.11	82	1.8	7.04	182	1.81	6.77	595	1.89	.004
I believe that human activities are affecting the climate now.	6.15	333	2.18	7.1	82	2.08	6.56	183	2.33	6.41	598	2.24	.001
In the last 12 months I have taken actions to reduce my impact on the environment.	6.46	332	1.8	6.73	80	1.86	6.31	181	1.66	6.45	593	1.77	.212
Adapting to climate change will hurt my community.	6.57	332	2.07	7.04	83	1.81	6.82	181	2.02	6.71	596	2.02	.118
Adapting to climate change will bring business opportunities to my community.	5.02	330	1.92	5.79	81	2.04	5.07	182	2.04	5.14	593	1.99	.006

CATEGORY	Farmer			NACC Member			Non-Farmer			Total			
Climate change does not affect me directly.	3.88	330	2.39	3.22	83	2.04	4.28	183	2.27	3.91	596	2.33	.002
I believe human activities affect the climate beyond the cycle of droughts that occur naturally in Australia.	5.57	332	2.17	6.37	83	2.06	5.98	183	2.22	5.81	598	2.19	.005
Climate change is not a real problem.	3.82	331	2.25	3.01	83	2.07	3.71	182	2.54	3.68	596	2.33	.017
I am making an effort to use my car less than before.	4.93	332	2.13	5.51	83	2.06	5.81	182	2.14	5.28	597	2.16	.000
I take actions to leave the environment in better shape than it is now.	7.28	331	1.49	7.3	82	1.33	6.64	183	1.61	7.09	596	1.53	.000
Conflicting information about climate change makes it hard to know whether it is actually happening.	6.61	332	2.27	6.19	83	2.31	6.25	183	2.4	6.44	598	2.32	.137
I do not think about how much energy I use at home.	3.59	331	2.38	2.96	82	1.9	3.45	182	2.31	3.46	595	2.3	.088
I think we should develop nuclear power to supply energy to the region.	5.27	332	2.79	4.59	83	2.77	4.65	181	2.91	4.98	596	2.84	.025
I do not understand how carbon emission trading schemes work.	5.55	330	2.59	5.41	83	2.71	6.04	182	2.5	5.68	595	2.59	.071

APPENDIX 2 COMPARISON OF RESPONSES BY FARMER AND NON-FARMER MEMBERS OF NACC

Table 10: Farmer and non farmer members of NACC by means

Statements	Farmer NACC member			Farmer non-member			Total			P-value
	Mean	N	SD	Mean	N	SD	Mean	N	SD	
1 = Strongly disagree 9 = Strongly agree										
The continued loss (extinction) of animals concerns me	7.35	46	1.73	6.90	332	1.88	6.96	378	1.87	.131
I would like to see a complete halt to land clearing.	4.70	46	2.97	4.24	333	2.68	4.30	379	2.72	.287
I would like to see more trees and native vegetation in the region.	7.00	46	2.04	6.66	332	1.87	6.70	378	1.89	.253
Protecting the environment is more important than a strong economy.	5.41	46	2.1	5.05	333	2.01	5.09	379	2.02	.251
Farmers should be allowed to grow genetically modified crops if it helps continue farming.	5.54	46	2.75	5.73	331	2.86	5.71	377	2.84	.680
Coastal Western Australia is in danger of being over-developed.	5.89	46	2.42	6.17	333	2.44	6.13	379	2.44	.476
Farmers should be allowed to clear the land that belongs to them.	4.85	46	2.53	6.08	331	2.44	5.93	377	2.48	.002
On balance WA's natural environment (coastline rivers soils water and land) is well managed.	4.20	45	1.9	4.91	332	2.01	4.82	377	2.01	.026
Conservationists and 'greenies' don't realise how important the economy is to our survival.	6.09	46	2.27	6.51	333	2.14	6.46	379	2.15	.212
There is a strong sense of community in the place where I live.	7.09	46	1.77	6.91	333	1.82	6.93	379	1.81	.535
Better management of coastal areas will benefit me personally.	4.96	46	2.26	4.84	333	2.18	4.85	379	2.19	.730
I am very involved in my community (e.g. sports service clubs volunteer organisations etc)	7.15	46	1.97	6.20	333	2.24	6.32	379	2.22	.007
My community will suffer if the environment is not looked after.	7.41	46	1.53	6.72	333	1.84	6.80	379	1.82	.015
I would like to do more work in my community but I'm too busy.	6.33	46	2.01	6.19	332	2.03	6.21	378	2.03	.670
Governments should do more to look after the environment.	7.13	45	1.58	6.57	330	1.89	6.63	375	1.87	.056
Better management of agricultural lands will benefit my community.	7.37	46	1.64	7.01	331	1.79	7.05	377	1.77	.196

Statements	Farmer NACC member			Farmer non-member			Total			P-value
I support immigration programs that bring more people to regional Australia.	5.33	45	2.5	4.68	332	2.53	4.76	377	2.53	.105
Businesses including farmers and developers must do more to look after our natural environment and wildlife.	6.85	46	1.9	6.54	331	1.93	6.58	377	1.93	.317
I believe that human activities are affecting the climate now.	6.78	46	2.27	6.15	333	2.18	6.23	379	2.2	.067
In the last 12 months I have taken actions to reduce my impact on the environment.	6.60	45	1.91	6.46	332	1.8	6.48	377	1.81	.629
Adapting to climate change will hurt my community.	6.94	47	1.92	6.57	332	2.07	6.61	379	2.05	.252
Adapting to climate change will bring business opportunities to my community.	5.22	46	2.21	5.02	330	1.92	5.04	376	1.96	.518
Climate change does not affect me directly.	3.11	47	1.97	3.88	330	2.39	3.79	377	2.35	.034
I believe human activities affect the climate beyond the cycle of droughts that occur naturally in Australia.	6.21	47	2.25	5.57	332	2.17	5.65	379	2.19	.059
Climate change is not a real problem.	3.09	47	1.86	3.82	331	2.25	3.73	378	2.21	.033
I am making an effort to use my car less than before.	5.30	47	2.17	4.93	332	2.13	4.97	379	2.14	.267
I take actions to leave the environment in better shape than it is now.	7.30	47	1.27	7.28	331	1.49	7.28	378	1.46	.941
Conflicting information about climate change makes it hard to know whether it is actually happening.	6.19	47	2.4	6.61	332	2.27	6.56	379	2.29	.243
I do not think about how much energy I use at home.	3.38	47	1.98	3.59	331	2.38	3.56	378	2.33	.571
I think we should develop nuclear power to supply energy to the region.	4.74	47	2.8	5.27	332	2.79	5.2	379	2.79	.232
I do not understand how carbon emission trading schemes work.	5.60	47	2.89	5.55	330	2.59	5.56	377	2.63	.920

APPENDIX 3: RESULTS OF ATTITUDE QUESTIONS BY DATABASE / SHIRE

Note: Scoring for all statements is on a 9 point Likert scale where *strongly disagree* = 1, *neither agree nor disagree* (i.e. neutral) = 5 and *strongly agree* = 9

RESPONSES TO QUESTION 1

THE CONTINUED LOSS (EXTINCTION) OF ANIMALS CONCERNS ME

Table A3.1: Ranked means by subgroup

All groups indicated moderate to strong agreement with the statement. Strongest agreement was found in participants from Gingin and Carnamah and weakest was among DAFWA and CDI respondents.

Location	Mean	N	SD
GINGIN	7.89	44	1.43
CARNAMAH	7.78	32	1.66
IRWIN	7.66	50	1.48
NACC MEMBER	7.63	82	1.76
MIGENEW	7.45	22	1.82
PERENJORI	7.35	23	1.97
MOORA	7.31	62	1.72
THREE SPRINGS	7.26	27	1.56
MEAN FOR ALL GROUPS	7.21	598	1.80
DANDARAGAN	7.18	17	1.59
DALWILINU	7.09	33	1.49
CDI	6.83	6	2.56
DAFWA	6.64	200	1.93

RESPONSES TO QUESTION 2

I WOULD LIKE TO SEE A COMPLETE HALT TO LAND CLEARING.

Table A3.2: Ranked means by subgroup

All groups appeared mildly neutral on the statement. The highest agreement was among NACC members the lowest was among those respondents drawn from the CDI and DAFWA databases.

Location	Mean	N	SD
NACC MEMBER	5.61	82	2.82
MIGENEW	5.55	22	2.61
GINGIN	5.48	44	2.15
PERENJORI	5.48	23	2.73
IRWIN	5.33	49	2.21
CARNAMAH	5.26	31	2.91
MOORA	4.94	63	2.62
DALWILINU	4.91	33	2.26
MEAN FOR ALL GROUPS	4.77	597	2.68
THREE SPRINGS	4.74	27	3.13
DANDARAGAN	4.18	17	2.46
DAFWA	3.89	200	2.62
CDI	3.83	6	2.86

RESPONSES TO QUESTION 3

I WOULD LIKE TO SEE MORE TREES AND NATIVE VEGETATION IN THE REGION

Table A3.3: Ranked means by subgroup

There was moderate to mild agreement with the statement, strongest agreement came from NACC member and lowest from CDI participants.

Location	Mean	N	SD
NACC MEMBER	7.60	82	1.84
IRWIN	7.50	50	1.47
CARNAMAH	7.41	32	1.93
GINGIN	7.41	44	1.48
MOORA	7.20	61	1.63
DALWILINU	7.09	33	1.40
PERENJORI	7.09	23	1.76
MIGENEW	7.05	22	2.17
MEAN FOR ALL GROUPS	6.98	597	1.84
DANDARAGAN	6.88	17	1.76
THREE SPRINGS	6.78	27	1.99
DAFWA	6.41	200	1.89
CDI	5.83	6	2.40

RESPONSES TO QUESTION 4

PROTECTING THE ENVIRONMENT IS MORE IMPORTANT THAN A STRONG ECONOMY

Table A3.4: Ranked means by subgroup

There was mild agreement to mild disagreement with this statement. Strongest agreement came from were those participants drawn from the Gingin and NACC databases. Strongest disagreement came from CDI and Dalwalinu.

Location	Mean	N	SD
GINGIN	5.93	44	1.56
NACC MEMBER	5.88	82	2.07
IRWIN	5.84	50	1.73
DANDARAGAN	5.63	16	1.71
CARNAMAH	5.53	32	2.02
THREE SPRINGS	5.41	27	1.93
MOORA	5.34	62	1.86
MEAN FOR ALL GROUPS	5.32	597	1.98
PERENJORI	5.04	23	2.40
MIGENEW	5.00	22	2.12
DAFWA	4.91	200	2.03
DALWILINU	4.85	33	1.72
CDI	4.50	6	1.76

RESPONSES TO QUESTION 5

FARMERS SHOULD BE ALLOWED TO GROW GENETICALLY MODIFIED CROPS IF IT HELPS CONTINUE FARMING.

Table A3.5: Ranked means by subgroup

Overall there was mild to moderate support for this statement. However, participants drawn from the Carnamah and Gingin databases indicated mild disagreement.

Location	Mean	N	SD
CDI	6.17	6	2.64
DALWILINU	6.03	33	2.65
DAFWA	5.89	198	2.82
MOORA	5.62	63	2.84
MEAN FOR ALL GROUPS	5.47	596	2.81
DANDARAGAN	5.41	17	2.74
MIGENEW	5.41	22	3.10
IRWIN	5.18	50	2.93
THREE SPRINGS	5.15	27	2.94
PERENJORI	5.09	22	3.05
NACC MEMBER	5.07	82	2.68
CARNAMAH	4.88	32	3.09
GINGIN	4.84	44	2.38

RESPONSES TO QUESTION 6

COASTAL WESTERN AUSTRALIA IS IN DANGER OF BEING OVER-DEVELOPED.

Table A3.6: Ranked means by subgroup

There was mild to moderate support for the statement. Participants from the Moora and Carnamah databases indicated greatest support while those from Three Springs and the CDI the lowest.

Location	Mean	N	SD
MOORA	6.56	63	2.15
CARNAMAH	6.44	32	2.72
DANDARAGAN	6.41	17	1.80
IRWIN	6.40	50	2.60
NACC MEMBER	6.39	82	2.44
PERENJORI	6.36	22	1.97
GINGIN	6.34	44	2.18
MEAN FOR ALL GROUPS	6.24	598	2.39
MIGENEW	6.09	22	2.58
DAFWA	6.07	200	2.49
DALWILINU	6.03	33	2.14
THREE SPRINGS	5.85	27	2.41
CDI	5.50	6	2.74

RESPONSES TO QUESTION 7

FARMERS SHOULD BE ALLOWED TO CLEAR THE LAND THAT BELONGS TO THEM.

Table A3.7: Ranked means by subgroup

There was mild to moderate agreement for the statement. NACC members indicated mild disagreement while those from the CDI were neutral.

Location	Mean	N	SD
DANDARAGAN	6.88	17	1.54
DALWILINU	6.55	33	1.84
DAFWA	6.38	198	2.31
CARNAMAH	5.94	32	2.50
MEAN FOR ALL GROUPS	5.72	596	2.52
PERENJORI	5.64	22	2.82
GINGIN	5.50	44	2.37
MOORA	5.46	63	2.76
THREE SPRINGS	5.41	27	2.63
IRWIN	5.32	50	2.42
MIGENEW	5.27	22	2.29
CDI	5.00	6	3.41
NACC MEMBER	4.29	82	2.61

RESPONSES TO QUESTION 8

ON BALANCE WA'S NATURAL ENVIRONMENT (COASTLINE RIVERS SOILS WATER AND LAND) IS WELL MANAGED.

Table A3.8: Ranked means by subgroup

Overall there was mild disagreement with the statement although opinions ranged from mid agreement to mild disagreement. Participants from Dandaragan indicated the greatest support for the statement while NACC members the greatest disagreement.

Location	Mean	N	SD
DANDARAGAN	6.06	17	1.48
DAFWA	5.01	199	2.00
THREE SPRINGS	4.96	27	1.99
MIGENEW	4.95	22	2.17
CDI	4.83	6	1.83
MEAN FOR ALL GROUPS	4.78	595	2.00
GINGIN	4.70	44	2.19
MOORA	4.70	63	1.90
CARNAMAH	4.68	31	1.62
DALWILINU	4.64	33	1.87
PERENJORI	4.41	22	2.52
IRWIN	4.40	50	1.83
NACC MEMBER	4.35	81	2.07

RESPONSES TO QUESTION 9

CONSERVATIONISTS AND 'GREENIES' DON'T REALISE HOW IMPORTANT THE ECONOMY IS TO OUR SURVIVAL.

Table A3.9: Ranked means by subgroup

Opinions ranged from neutral to moderate support for the statement. Dalwalinu and DAFWA participants indicated greatest support while NACC, Gingin and Irwin participants were neutral towards the statement.

Location	Mean	N	SD
DALWILINU	6.97	33	2.11
DAFWA	6.61	200	2.02
MOORA	6.52	63	2.24
THREE SPRINGS	6.52	27	1.50
CDI	6.50	6	1.87
PERENJORI	6.41	22	2.44
MEAN FOR ALL GROUPS	6.16	597	2.25
DANDARAGAN	6.06	17	1.64
MIGENEW	5.86	22	2.44
CARNAMAH	5.77	31	2.31
NACC MEMBER	5.45	82	2.41
GINGIN	5.39	44	2.22
IRWIN	5.32	50	2.63

RESPONSES TO QUESTION 10

THERE IS A STRONG SENSE OF COMMUNITY IN THE PLACE WHERE I LIVE

Table A3.10: Ranked means by subgroup

For the sample there was moderate agreement with the statement. CDI and Dandaragan indicated greatest agreement.

Location	Mean	N	SD
CDI	7.67	6	1.21
DANDARAGAN	7.41	17	1.87
CARNAMAH	7.19	32	1.65
DALWILINU	7.09	33	1.68
DAFWA	6.92	200	1.79
MIGENEW	6.91	22	2.29
PERENJORI	6.91	22	2.04
IRWIN	6.82	50	1.90
MEAN FOR ALL GROUPS	6.79	598	1.87
NACC MEMBER	6.67	82	1.87
GINGIN	6.66	44	1.78
MOORA	6.16	63	2.02
THREE SPRINGS	6.15	27	1.99

RESPONSES TO QUESTION 11

BETTER MANAGEMENT OF COASTAL AREAS WILL BENEFIT ME PERSONALLY.

Table A3.11: Ranked means by subgroup

Opinions were split on this statement. While for the whole sample the mean suggested neutrality there was moderate disagreement from CDI and Perenjori participants and mild agreement from Irwin, Gingin and NACC participants.

Location	Mean	N	SD
IRWIN	6.38	50	1.85
GINGIN	5.61	44	2.20
NACC MEMBER	5.61	82	2.32
MIGENEW	5.50	22	2.60
CARNAMAH	5.29	31	2.02
MEAN FOR ALL GROUPS	5.01	597	2.19
DANDARAGAN	4.94	17	1.03
MOORA	4.81	63	1.99
THREE SPRINGS	4.70	27	2.45
DAFWA	4.62	200	2.09
DALWILINU	4.39	33	1.95
PERENJORI	3.50	22	2.09
CDI	3.33	6	1.97

RESPONSES TO QUESTION 11

BETTER MANAGEMENT OF COASTAL AREAS WILL BENEFIT ME PERSONALLY.

Table A3.11: Ranked means by subgroup

Opinions were split on this statement. While for the whole sample the mean suggested neutrality there was moderate disagreement from CDI and Perenjori participants and mild agreement from Irwin, Gingin and NACC participants.

Location	Mean	N	SD
IRWIN	6.38	50	1.85
GINGIN	5.61	44	2.20
NACC MEMBER	5.61	82	2.32
MIGENEW	5.50	22	2.60
CARNAMAH	5.29	31	2.02
MEAN FOR ALL GROUPS	5.01	597	2.19
DANDARAGAN	4.94	17	1.03
MOORA	4.81	63	1.99
THREE SPRINGS	4.70	27	2.45
DAFWA	4.62	200	2.09
DALWILINU	4.39	33	1.95
PERENJORI	3.50	22	2.09
CDI	3.33	6	1.97

RESPONSES TO QUESTION 12

I AM VERY INVOLVED IN MY COMMUNITY.

Table A3.12: Ranked means by subgroup

There was agreement to strong agreement by all groups to this statement. Participants who were NACC members or drawn from the IRWIN database showed the greatest agreement

Location	Mean	N	SD
NACC MEMBER	7.68	82	1.39
IRWIN	7.58	50	1.72
MIGENEW	7.50	22	1.57
GINGIN	7.18	44	1.62
MOORA	7.17	63	1.55
DANDARAGAN	7.06	17	1.20
Total	6.95	597	1.77
CARNAMAH	6.77	31	1.98
PERENJORI	6.73	22	2.23
DALWILINU	6.70	33	1.69
THREE SPRINGS	6.59	27	1.34
CDI	6.50	6	2.81
DAFWA	6.46	200	1.89

RESPONSES TO QUESTION 13

MY COMMUNITY WILL SUFFER IF THE ENVIRONMENT IS NOT LOOKED AFTER.

Table A3.13: Ranked means by subgroup

This statement was supported by all groups with the strongest support indicated by NACC, Irwin and Migenev participants.

Location	Mean	N	SD
NACC MEMBER	7.68	82	1.39
IRWIN	7.58	50	1.72
MIGENEW	7.50	22	1.57
GINGIN	7.18	44	1.62
MOORA	7.17	63	1.55
DANDARAGAN	7.06	17	1.20
MEAN FOR ALL GROUPS	6.95	597	1.77
CARNAMAH	6.77	31	1.98
PERENJORI	6.73	22	2.23
DALWILINU	6.70	33	1.69
THREE SPRINGS	6.59	27	1.34
CDI	6.50	6	2.81
DAFWA	6.46	200	1.89

RESPONSES TO QUESTION 14

I WOULD LIKE TO DO MORE WORK IN MY COMMUNITY BUT I'M TOO BUSY.

Table A3.14: Ranked means by subgroup

Overall there was mild support for the statement.

Location	Mean	N	SD
PERENJORI	6.52	21	2.50
CDI	6.50	6	1.64
IRWIN	6.42	50	1.95
NACC MEMBER	6.41	82	1.85
DALWILINU	6.27	33	1.75
DAFWA	6.20	199	2.04
MEAN FOR ALL GROUPS	6.18	595	1.99
MOORA	6.17	63	1.99
DANDARAGAN	6.12	17	1.90
MIGENEW	5.95	22	1.91
THREE SPRINGS	5.89	27	2.04
GINGIN	5.80	44	1.96
CARNAMAH	5.68	31	2.20

RESPONSES TO QUESTION 15

GOVERNMENTS SHOULD DO MORE TO LOOK AFTER THE ENVIRONMENT.

Table A3.15: Ranked means by subgroup

The statement garnered mild to moderate agreement. NACC members, and CDI participants indicated greatest support while DAFWA and Perenjori participants were more neutral.

Location	Mean	N	SD
NACC MEMBER	7.36	81	1.46
CDI	7.33	6	1.63
MIGENEW	7.27	22	1.64
IRWIN	7.12	50	1.73
GINGIN	6.98	44	1.45
MOORA	6.87	63	1.83
MEAN FOR ALL GROUPS	6.75	593	1.82
THREE SPRINGS	6.70	27	1.59
CARNAMAH	6.61	31	1.96
DANDARAGAN	6.59	17	1.54
DALWILINU	6.58	33	1.54
DAFWA	6.40	198	1.97
PERENJORI	5.90	21	2.55

RESPONSES TO QUESTION 16

BETTER MANAGEMENT OF AGRICULTURAL LANDS WILL BENEFIT MY COMMUNITY.

Table A3.16: Ranked means by subgroup

On this statement all groups indicated agreement ranging from mild to moderate.

Location	Mean	N	SD
CDI	7.67	6	1.51
MIGENEW	7.64	22	1.53
NACC MEMBER	7.49	82	1.64
PERENJORI	7.41	22	1.68
IRWIN	7.18	50	1.53
MOORA	7.16	63	1.80
DALWILINU	7.06	33	1.64
MEAN FOR ALL GROUPS	7.06	595	1.74
THREE SPRINGS	6.96	27	1.53
DAFWA	6.91	198	1.85
CARNAMAH	6.74	31	2.21
DANDARAGAN	6.65	17	1.46
GINGIN	6.59	44	1.47

RESPONSES TO QUESTION 17

I SUPPORT IMMIGRATION PROGRAMS THAT BRING MORE PEOPLE TO REGIONAL AUSTRALIA.

Table A3.17: Ranked means by subgroup

Opinions ranged moderate disagreement through to mild support. Strongest support came from CDI and NACC participants.

Location	Mean	N	SD
CDI	5.67	6	1.21
NACC MEMBER	5.14	81	2.53
THREE SPRINGS	4.81	27	2.79
DAFWA	4.81	199	2.53
MEAN FOR ALL GROUPS	4.59	596	2.55
MOORA	4.52	63	2.63
DALWILINU	4.45	33	2.59
IRWIN	4.36	50	2.83
GINGIN	4.18	44	2.19
DANDARAGAN	4.06	17	2.28
PERENJORI	4.05	22	3.02
MIGENEW	4.00	22	2.39
CARNAMAH	3.72	32	2.29

RESPONSES TO QUESTION 18

BUSINESSES INCLUDING FARMERS AND DEVELOPERS MUST DO MORE TO LOOK AFTER OUR NATURAL ENVIRONMENT AND WILDLIFE.

Table A3.18: Ranked means by subgroup

All groups indicated agreement with this statement. Response means ranged between mild and moderate.

Location	Mean	N	SD
IRWIN	7.58	50	1.26
GINGIN	7.50	44	1.37
CARNAMAH	7.12	32	2.11
NACC MEMBER	7.11	82	1.80
MIGENEW	7.05	22	1.84
CDI	6.83	6	2.40
MEAN FOR ALL GROUPS	6.77	595	1.89
MOORA	6.76	63	1.97
THREE SPRINGS	6.67	27	1.96
PERENJORI	6.55	22	2.36
DAFWA	6.36	199	1.96
DALWILINU	6.25	32	1.76
DANDARAGAN	6.25	16	1.65

RESPONSES TO QUESTION 19

I BELIEVE THAT HUMAN ACTIVITIES ARE AFFECTING THE CLIMATE NOW.

Table A3.19: Ranked means by subgroup

Overall there was agreement with the statement. Strongest support came from Irwin and NACC respondents.

Location	Mean	N	SD
IRWIN	7.22	50	1.85
NACC MEMBER	7.10	82	2.08
GINGIN	6.95	44	1.78
CARNAMAH	6.88	32	2.24
CDI	6.67	6	1.97
MOORA	6.52	63	2.21
MIGENEW	6.45	22	2.46
MEAN FOR ALL GROUPS	6.41	598	2.24
THREE SPRINGS	6.11	27	1.93
PERENJORI	6.00	22	2.81
DANDARAGAN	5.94	17	2.77
DAFWA	5.93	200	2.24
DALWILINU	5.61	33	2.32

RESPONSES TO QUESTION 20

IN THE LAST 12 MONTHS I HAVE TAKEN ACTIONS TO REDUCE MY IMPACT ON THE ENVIRONMENT.

Table A3.20: Ranked means by subgroup

All groups showed agreement or moderate agreement with the statement. Those respondents drawn from the CDI or NACC membership indicated greatest agreement.

Location	Mean	N	SD
CDI	7.50	6	1.87
NACC MEMBER	6.73	80	1.86
IRWIN	6.65	49	1.81
MOORA	6.54	63	1.63
GINGIN	6.48	44	1.76
MEAN FOR ALL GROUPS	6.45	593	1.77
DANDARAGAN	6.41	17	1.58
MIGENEW	6.41	22	1.76
PERENJORI	6.41	22	2.46
CARNAMAH	6.38	32	1.81
DAFWA	6.35	199	1.75
THREE SPRINGS	6.22	27	1.19
DALWILINU	6.00	32	1.80

RESPONSES TO QUESTION 21

THE EFFECTS OF CLIMATE CHANGE WILL BE VERY SERIOUS FOR OUR REGION.

Table A3.21: Ranked means by subgroup

While there was general support for the statement, agreement ranged from neutral to moderate.

Location	Mean	N	SD
IRWIN	7.12	50	1.80
GINGIN	7.07	44	1.53
NACC MEMBER	7.04	83	1.81
CARNAMAH	6.88	32	2.25
THREE SPRINGS	6.88	26	1.70
DALWILINU	6.78	32	2.09
MIGENEW	6.74	23	2.20
Total	6.71	596	2.02
MOORA	6.66	62	2.01
PERENJORI	6.64	22	2.57
DAFWA	6.44	199	2.16
DANDARAGAN	6.29	17	1.72
CDI	5.00	6	1.90

RESPONSES TO QUESTION 23

ADAPTING TO CLIMATE CHANGE WILL BRING BUSINESS OPPORTUNITIES TO OUR REGION.

Table A3.23: Ranked means by subgroup

Opinions ranged from mild disagreement to mild agreement

Location	Mean	N	Std. Deviation
NACC MEMBER	5.79	81	2.04
CDI	5.67	6	2.07
DANDARAGAN	5.47	17	1.01
DALWILINU	5.33	33	1.59
GINGIN	5.30	44	2.05
Total	5.14	593	1.99
IRWIN	5.08	49	2.05
MIGENEW	5.04	23	2.16
MOORA	5.02	63	1.98
CARNAMAH	4.97	31	2.17
PERENJORI	4.95	22	2.36
DAFWA	4.93	198	1.95
THREE SPRINGS	4.69	26	1.95

RESPONSES TO QUESTION 24

CLIMATE CHANGE DOES NOT AFFECT ME DIRECTLY.

Table A3.24: Ranked means by subgroup

Opinions for all groups lay between moderate disagreement through to agreement. CDI participants believed they would be the least affected while NACC members the most.

Location	Mean	N	SD
CDI	6.00	6	2.97
CARNAMAH	5.16	32	2.67
DANDARAGAN	5.06	17	1.75
MOORA	4.14	63	2.27
MIGENEW	4.09	23	2.57
DALWILINU	4.06	33	2.11
GINGIN	4.02	44	2.18
MEAN FOR ALL GROUPS	3.91	596	2.33
DAFWA	3.89	197	2.38
IRWIN	3.58	50	2.23
PERENJORI	3.55	22	2.58
THREE SPRINGS	3.42	26	2.02
NACC MEMBER	3.22	83	2.04

RESPONSES TO QUESTION 25

I BELIEVE HUMAN ACTIVITIES AFFECT THE CLIMATE BEYOND THE CYCLE OF DROUGHTS THAT OCCUR NATURALLY IN AUSTRALIA.

Table A3.25: Ranked means by subgroup

There was neutral to mild agreement for this statement.

Location	Mean	N	SD
GINGIN	6.39	44	1.91
NACC MEMBER	6.37	83	2.06
IRWIN	6.30	50	2.13
CARNAMAH	6.19	32	2.44
DALWILINU	6.06	33	2.00
CDI	6.00	6	2.68
THREE SPRINGS	5.96	26	2.05
MEAN FOR ALL GROUPS	5.81	598	2.19
MOORA	5.73	63	2.34
DAFWA	5.40	199	2.05
MIGENEW	5.35	23	2.76
PERENJORI	5.18	22	2.54
DANDARAGAN	5.00	17	2.26

RESPONSES TO QUESTION 26

CLIMATE CHANGE IS NOT A REAL PROBLEM

Table A3.26: Ranked means by subgroup

The statement was given in the negative and all participant groups indicated disagreement.

Location	Mean	N	SD
MIGENEW	4.57	21	2.38
CDI	4.33	6	2.80
DANDARAGAN	4.29	17	2.31
DALWILINU	4.18	33	2.10
DAFWA	3.98	199	2.30
THREE SPRINGS	3.92	26	2.15
MEAN FOR ALL GROUPS	3.68	596	2.33
IRWIN	3.56	50	2.56
GINGIN	3.36	44	2.32
MOORA	3.35	63	2.27
CARNAMAH	3.34	32	2.57
PERENJORI	3.14	22	2.55
NACC MEMBER	3.01	83	2.07

RESPONSES TO QUESTION 27

I AM MAKING AN EFFORT TO USE MY CAR LESS THAN BEFORE.

Table A3.27: Ranked means by subgroup

There was both disagreement and agreement indicated to the statement. The CDI and Perenjori participants indicated moderate to mild disagreement with the statements while Canamah and Gingin indicated moderate to mild agreement. Overall the mean indicated neutrality toward the statement

Location	Mean	N	SD
CARNAMAH	7.00	32	1.97
GINGIN	5.66	44	2.18
MOORA	5.59	63	2.06
IRWIN	5.56	50	2.47
NACC MEMBER	5.51	83	2.06
MIGENEW	5.35	23	1.99
MEAN FOR ALL GROUPS	5.28	597	2.16
THREE SPRINGS	5.12	26	1.99
DALWILINU	5.00	33	2.18
DANDARAGAN	4.94	16	1.77
DAFWA	4.89	199	2.02
PERENJORI	4.36	22	2.63
CDI	3.67	6	2.42

RESPONSES TO QUESTION 28

I TAKE ACTIONS TO LEAVE THE ENVIRONMENT IN BETTER SHAPE THAN IT IS NOW.

Table A3.28: Ranked means by subgroup

The mean for all groups indicated moderate agreement with the statement.

Location	Mean	N	SD
DAFWA	7.32	198	1.43
NACC MEMBER	7.30	82	1.33
GINGIN	7.14	44	1.61
PERENJORI	7.14	22	1.39
MEAN FOR ALL GROUPS	7.09	596	1.53
MOORA	7.02	63	1.49
CARNAMAH	6.88	32	1.43
IRWIN	6.88	50	1.53
THREE SPRINGS	6.88	26	1.34
MIGENEW	6.74	23	2.03
CDI	6.67	6	2.88
DALWILINU	6.67	33	1.78
DANDARAGAN	6.12	17	1.96

RESPONSES TO QUESTION 29

CONFLICTING INFORMATION ABOUT CLIMATE CHANGE MAKES IT HARD TO KNOW WHETHER ITS ACTUALLY HAPPENING.

Table A3.29: Ranked means by subgroup

The overall mean indicated moderate agreement with the statement. Strongest agreement was in Three Springs and the weakest. The lower means for Irwin, NACC and Gingin may reflect higher levels of knowledge.

Location	Mean	N	SD
THREE SPRINGS	7.04	26	1.66
CDI	7.00	6	1.41
CARNAMAH	6.72	32	2.11
DAFWA	6.71	199	2.25
PERENJORI	6.59	22	2.52
DALWILINU	6.48	33	2.18
DANDARAGAN	6.47	17	2.32
MEAN FOR ALL GROUPS	7.09	596	1.53
MIGENEW	6.43	23	2.64
NACC MEMBER	6.19	83	2.31
IRWIN	6.16	50	2.85
MOORA	6.08	63	2.30
GINGIN	5.75	44	2.35

RESPONSES TO QUESTION 30

I DO NOT THINK ABOUT THE ENERGY I USE AT HOME

Table 30: Ranked means by subgroup

Over all participants indicated moderate disagreement with the statement. Disagreement ranged from mild to strong.

Location	Mean	N	SD
DANDARAGAN	4.65	17	2.42
CDI	4.33	6	2.88
MIGENEW	3.87	23	2.26
MOORA	3.77	62	2.60
GINGIN	3.59	44	2.38
DALWILINU	3.48	33	2.09
DAFWA	3.48	198	2.33
MEAN FOR ALL GROUPS	3.46	595	2.3
THREE SPRINGS	3.42	26	1.81
IRWIN	3.38	50	2.29
PERENJORI	3.36	22	2.70
NACC MEMBER	2.96	82	1.90
CARNAMAH	2.94	32	2.40

RESPONSES TO QUESTION 31

I THINK WE SHOULD DEVELOP NUCLEAR POWER TO SUPPLY ENERGY TO THE REGION

Table 31: Ranked means by subgroup

Overall three was mild agreement with the statement. Agreement ranged from mild to moderate.

Location	Mean	N	SD
THREE SPRINGS	7.04	26	1.66
CDI	7.00	6	1.41
CARNAMAH	6.72	32	2.11
DAFWA	6.71	199	2.25
PERENJORI	6.59	22	2.52
DALWILINU	6.48	33	2.18
DANDARAGAN	6.47	17	2.32
MEAN FOR ALL GROUPS	6.44	598	2.32
MIGENEW	6.43	23	2.64
NACC MEMBER	6.19	83	2.31
IRWIN	6.16	50	2.85
MOORA	6.08	63	2.30
GINGIN	5.75	44	2.35

RESPONSES TO QUESTION 32

I DO NOT UNDERSTAND HOW CARBON EMISSION TRADING SCHEMES WORK.

Table A3.32: Ranked means by subgroup

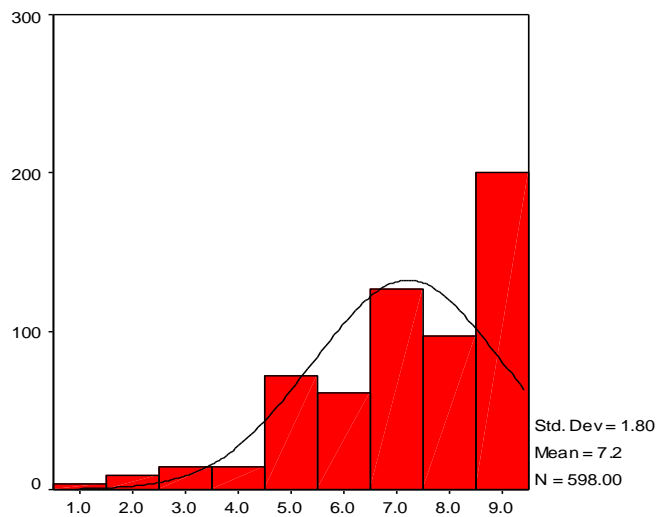
Means for all groups indicated mild agreement with the statement

Location	Mean	N	SD
CDI	8.33	6	1.21
THREE SPRINGS	6.81	26	2.23
DANDARAGAN	6.71	17	1.86
MIGENEW	6.00	23	2.91
MOORA	5.78	63	2.47
GINGIN	5.68	44	2.48
MEAN FOR ALL GROUPS	5.68	595	2.59
IRWIN	5.60	50	2.73
DAFWA	5.57	197	2.53
PERENJORI	5.43	21	2.87
NACC MEMBER	5.41	83	2.71
DALWILINU	5.36	33	2.66
CARNAMAH	5.34	32	2.81

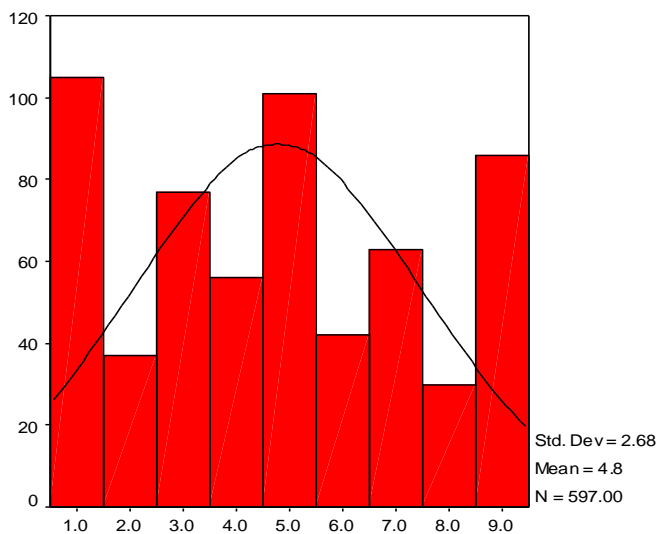
APPENDIX4 DISTRIBUTION OF RESPONSES ON QUESTIONS 1-32

The histograms below represent the frequency of responses given to each statement. The scale on the x axis represented the degree to which respondents either agreed or disagreed with the statement. On this Likert scale a score of "1" indicates *strong disagreement*, scores of "5" were interpreted as the respondent *neither agreeing or disagreeing* with the statement and scores of "9" represented *strong agreement*.

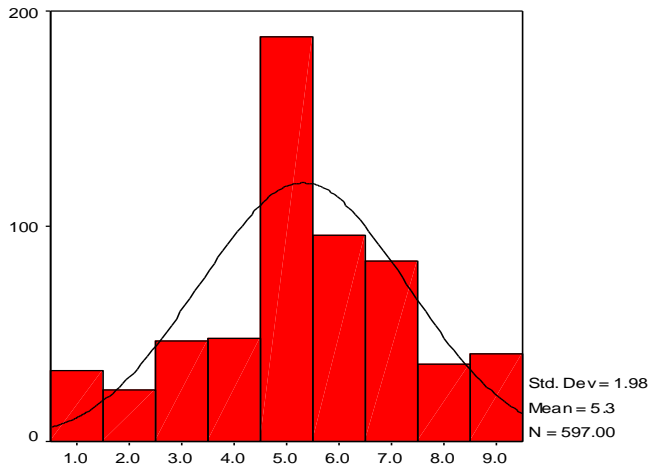
Q 1 The continued loss (extinction) of native plants and animals concerns me



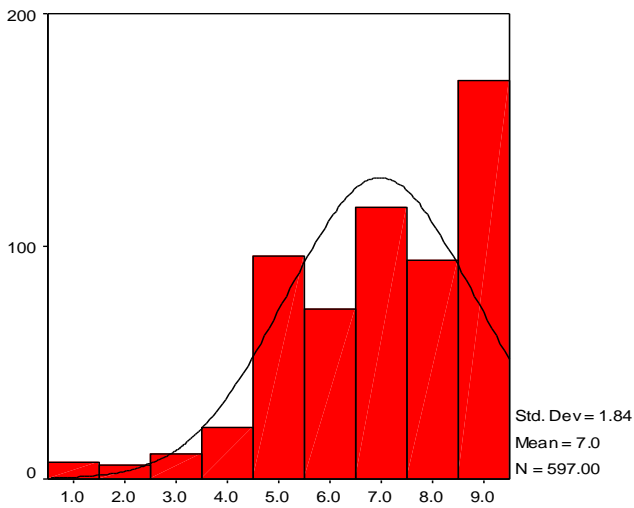
Q2 I would like to see a complete halt to land clearing.



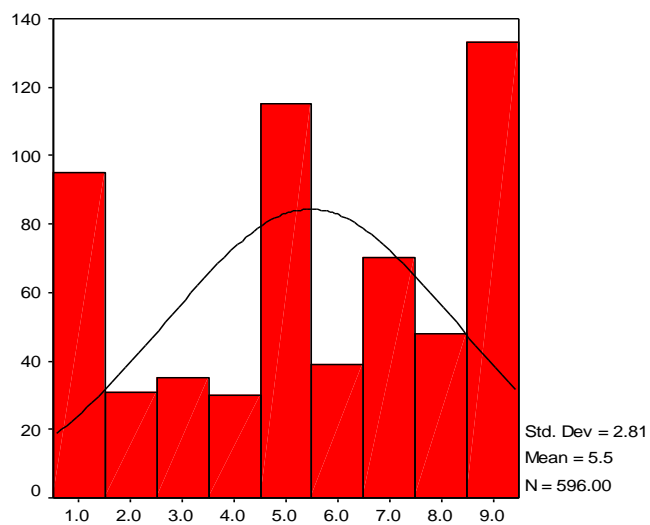
Q3. Protecting the environment is more important than a strong economy.



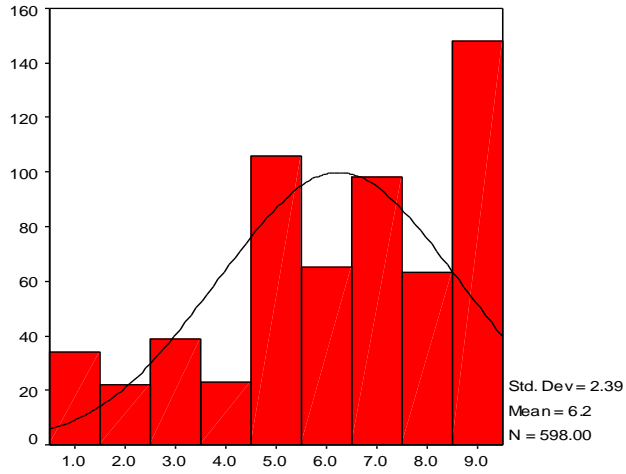
Q4 I would like to see more trees and native vegetation in the region.



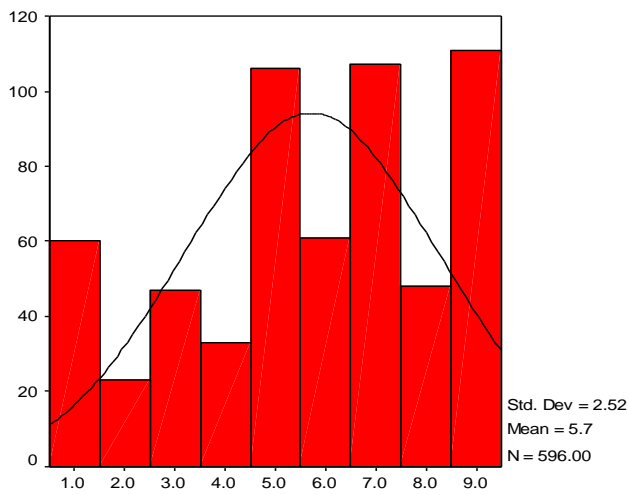
Q5 Farmers should be allowed to grow genetically modified crops if it helps continue farming.



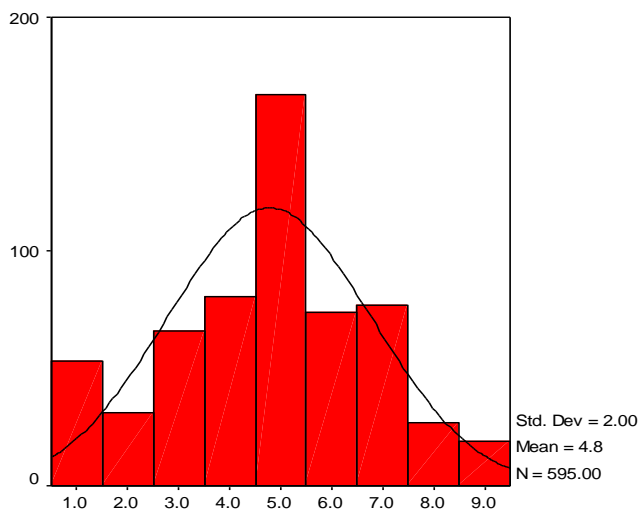
Q6. Coastal Western Australia is in danger of being over-developed.



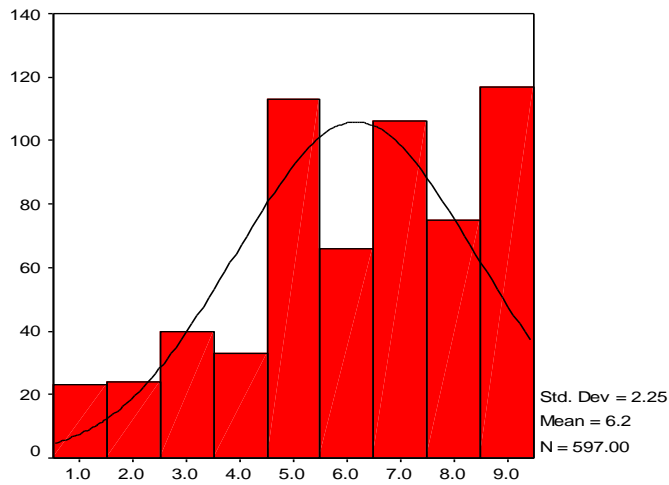
Q7. Farmers should be allowed to clear the land that belongs to them.



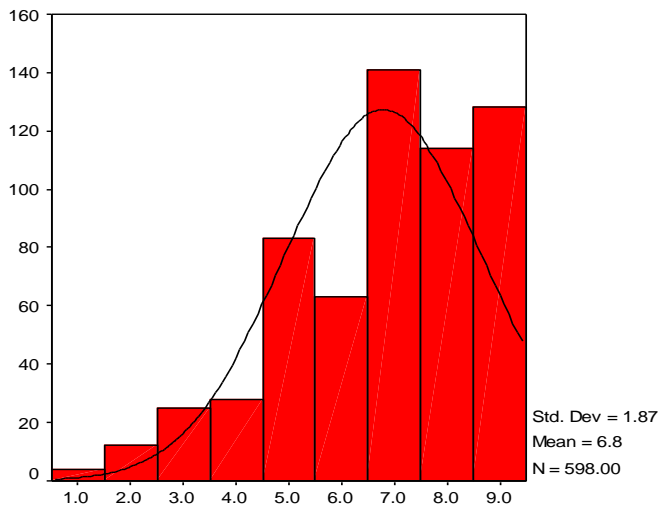
Q8 On balance WA's natural environment (coastline rivers soils water and land) is well managed



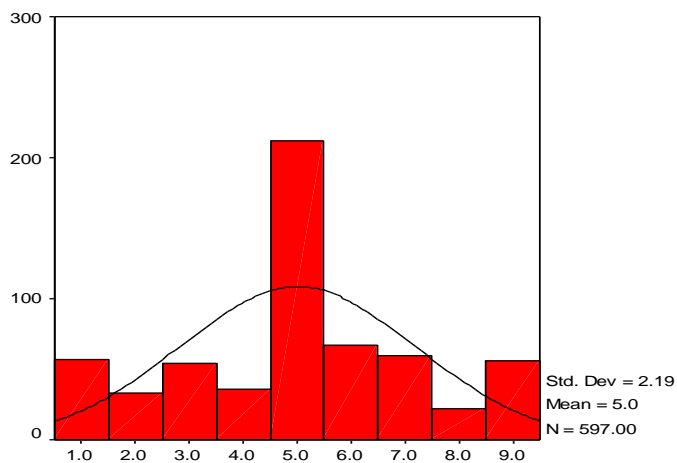
Q9. Conservationists and 'greenies' don't realise how important the economy to our survival



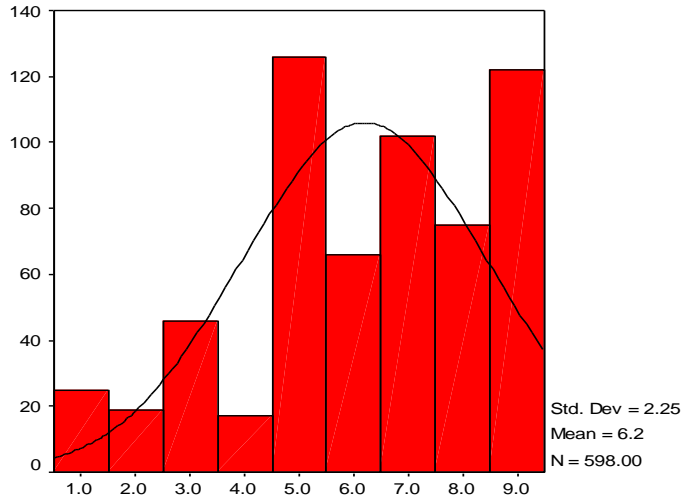
Q10. There is a strong sense of community in the place where I live.



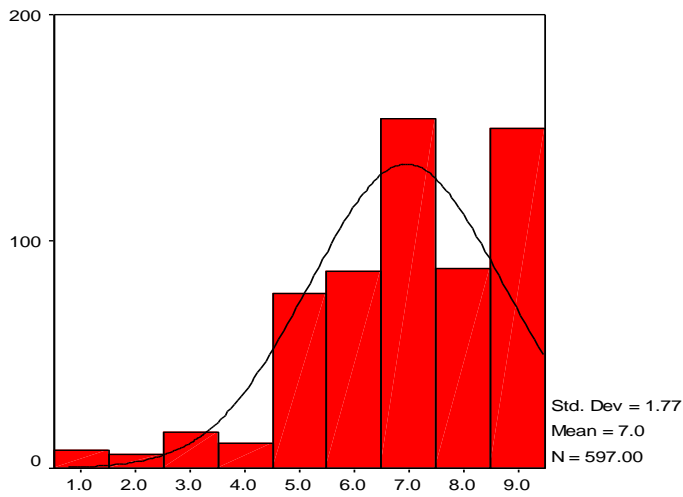
Q11. Better management of coastal areas will benefit me personally.



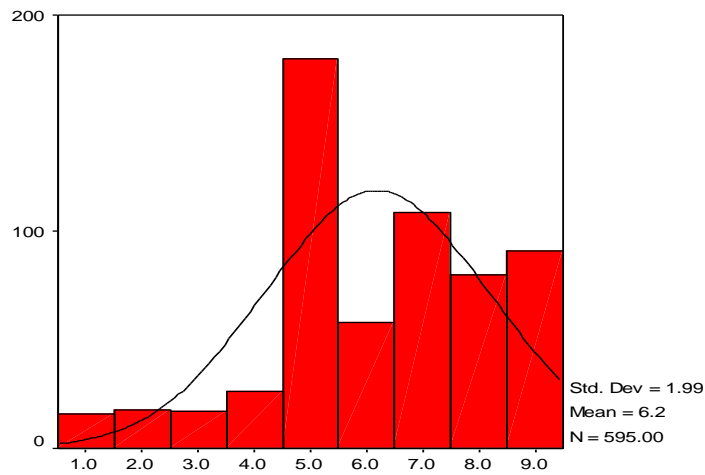
Q12. I am very involved in my community (e.g. sports, service clubs, volunteer organizations etc.)



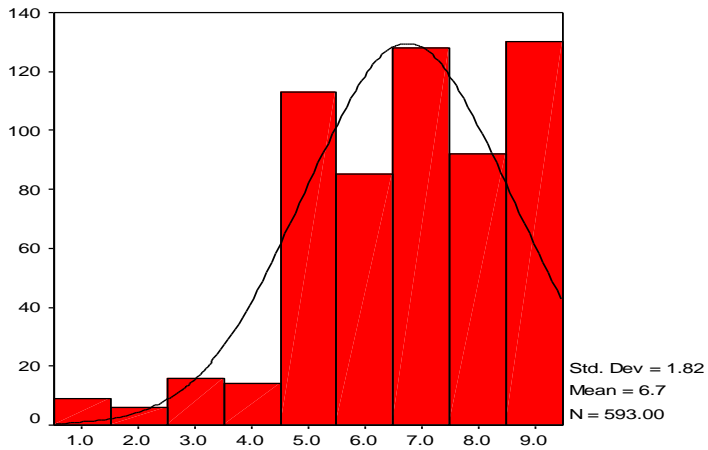
Q13. My community will suffer if the environment is not looked after.



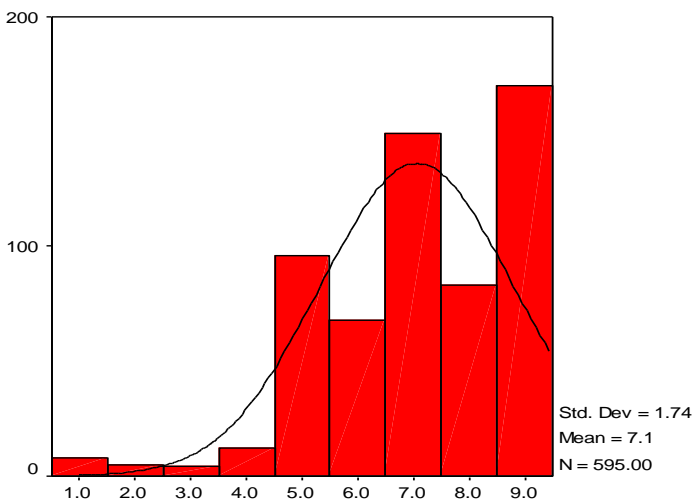
Q14. I would like to do more work in my community but I'm too busy.



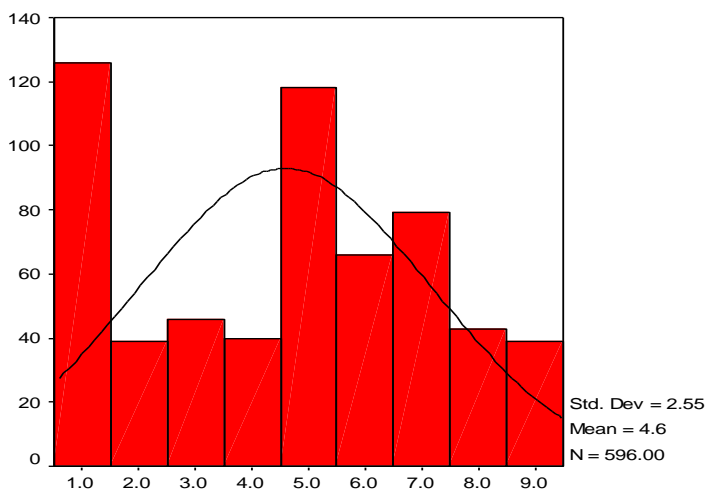
Q15. Governments should do more to look after the environment.



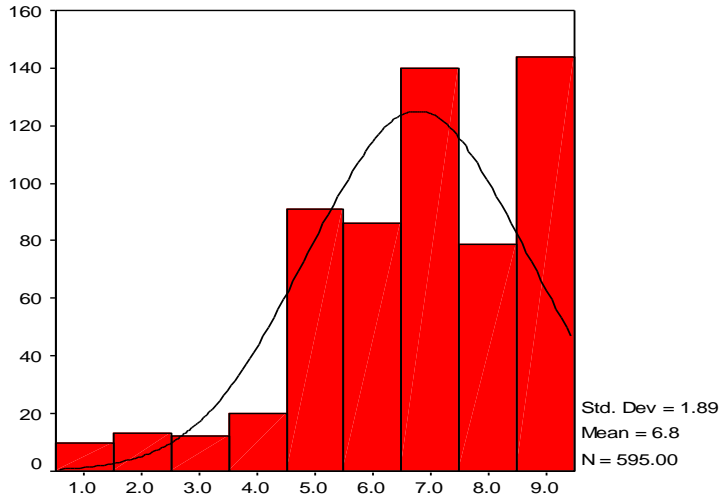
Q16. Better management of agricultural; land will benefit my community



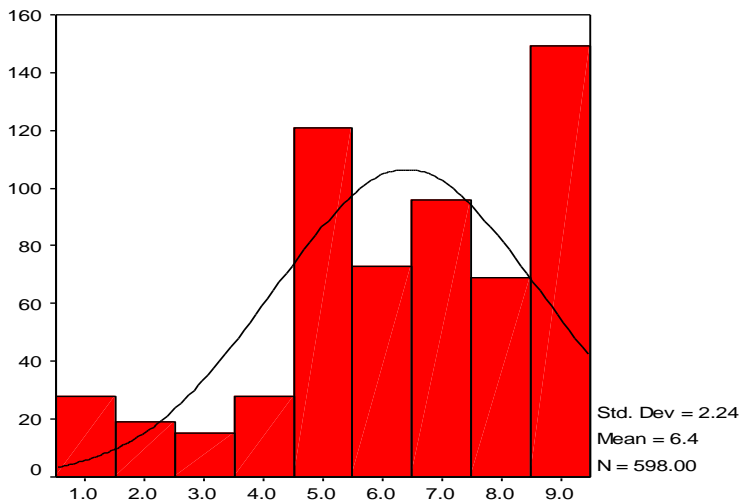
Q17. I support immigration programs that bring people to regional Australia



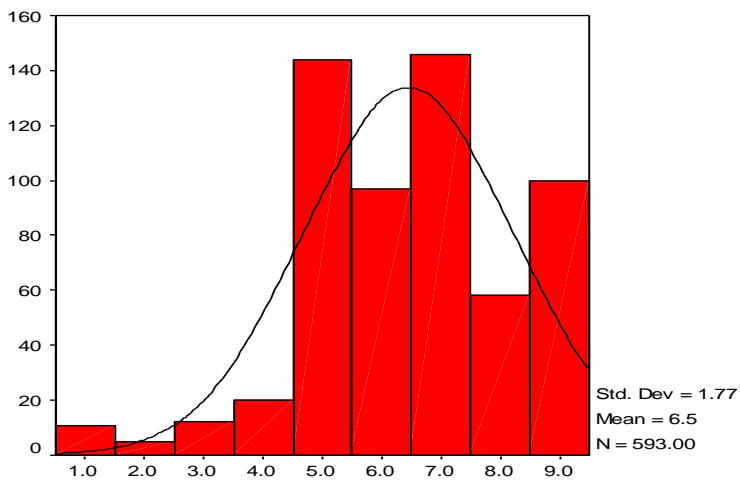
Q18. Businesses including farmers and developers must do more to look after our natural environment and wildlife



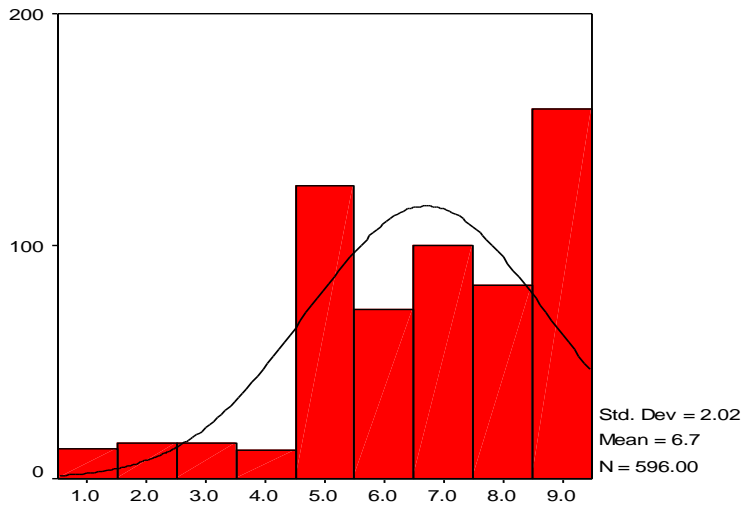
Q19. I believe that human activities are affecting the climate now.



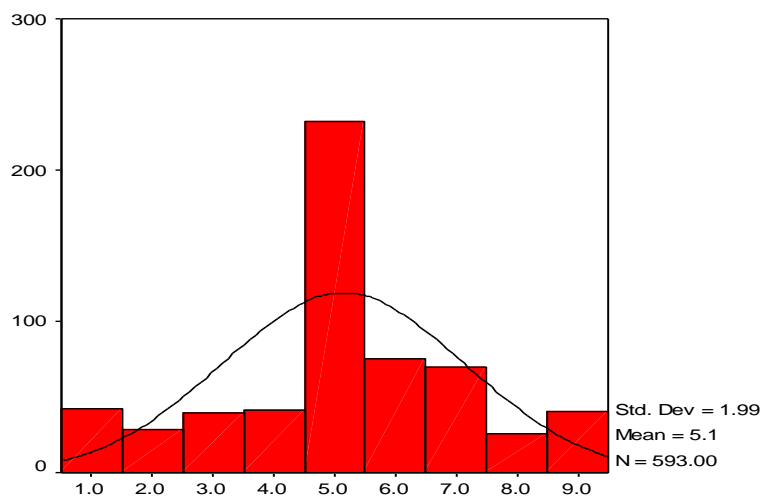
Q20. In the last 12 months I have taken actions to reduce my impact on the environment



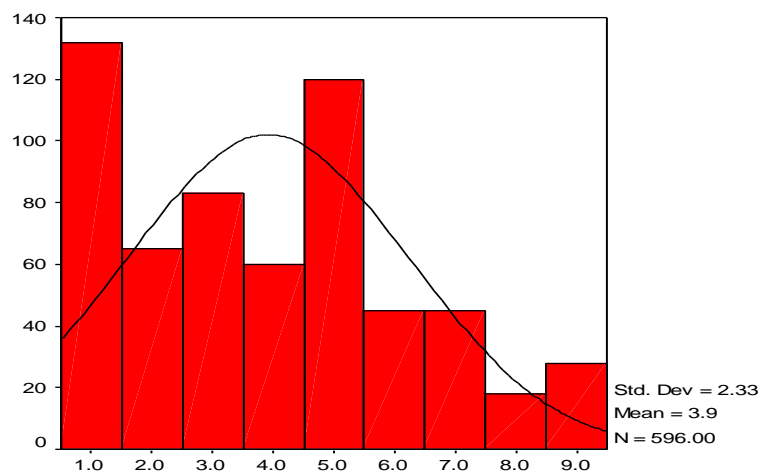
Q21. The effects of climate change will be very serious for our region.



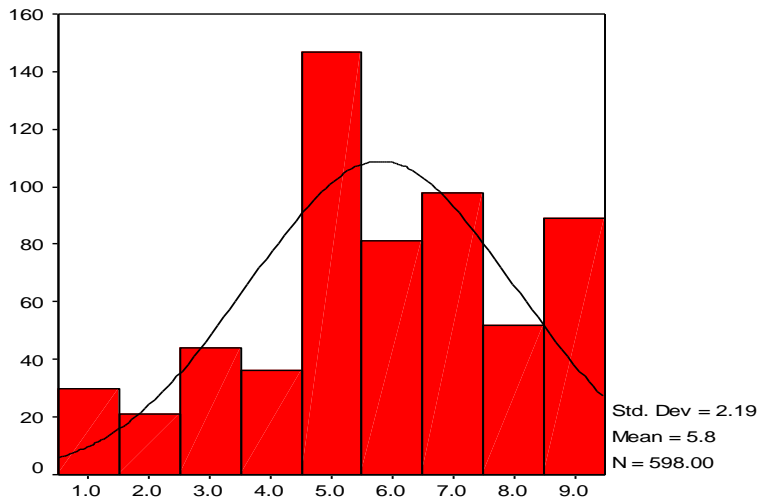
Q 23. Adapting to climate change will bring business opportunities to our region.



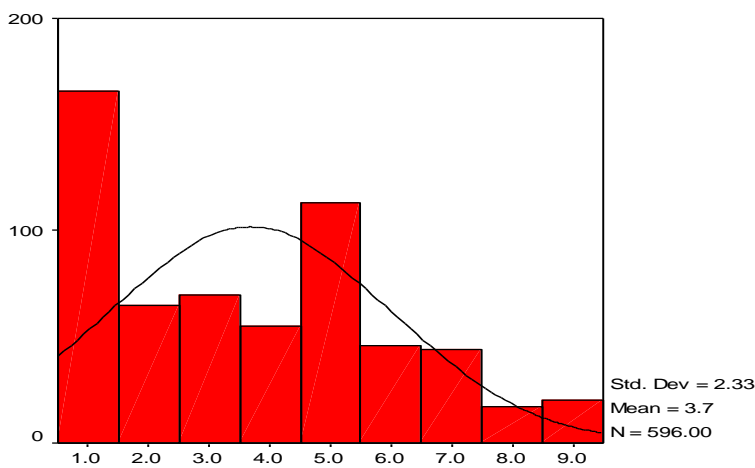
Q24. Climate change does not affect me directly.



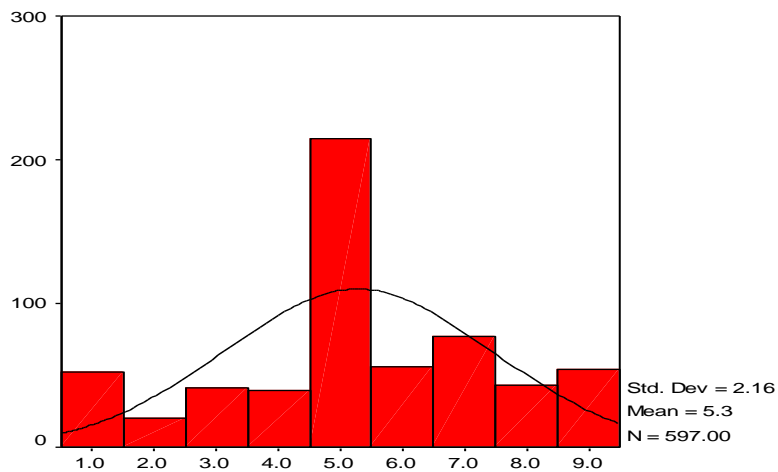
Q25 I believe human activities affect the climate beyond the cycle of droughts that occur naturally in Australia.



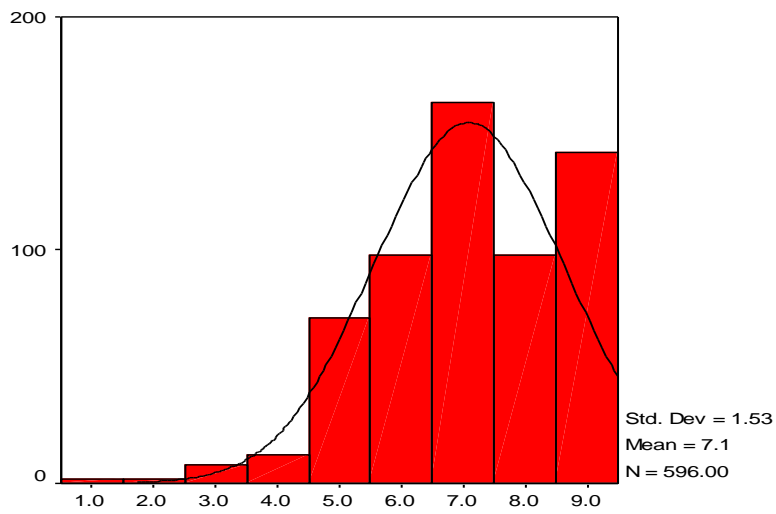
Q26. Climate change is not a real problem.



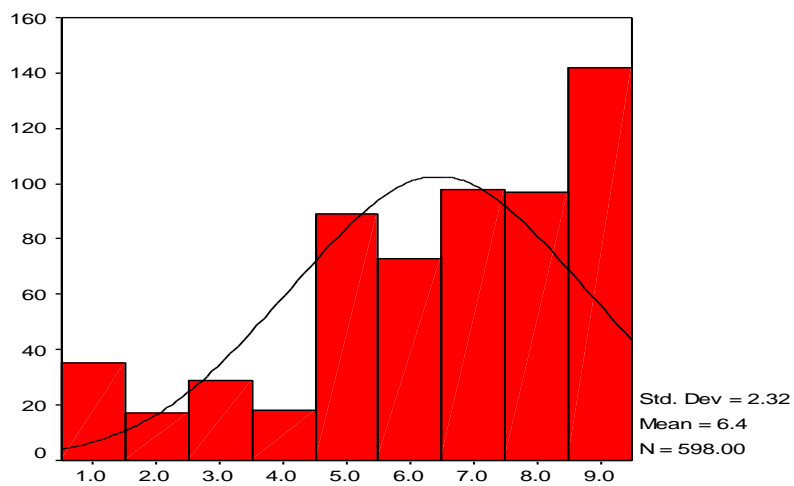
Q27 I am making an effort to use my car less than before



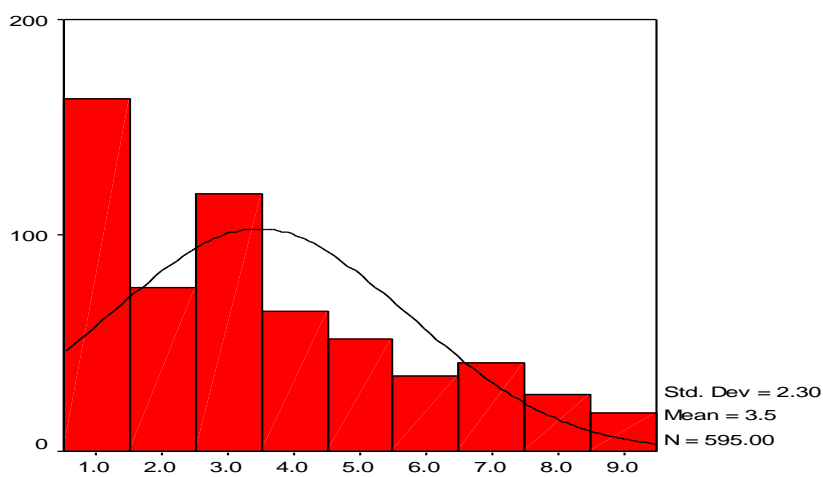
Q 28 I take actions to leave the environment in better shape than it is now.



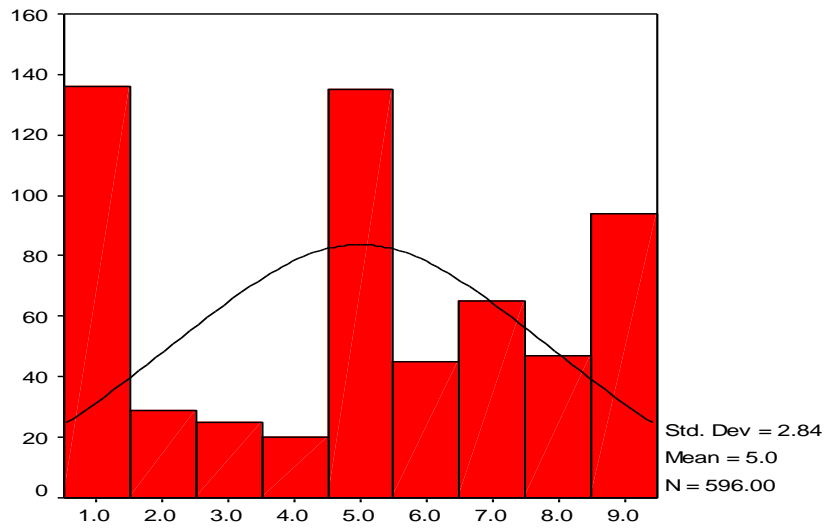
Q29. Conflicting information about climate change makes it hard to know wheth



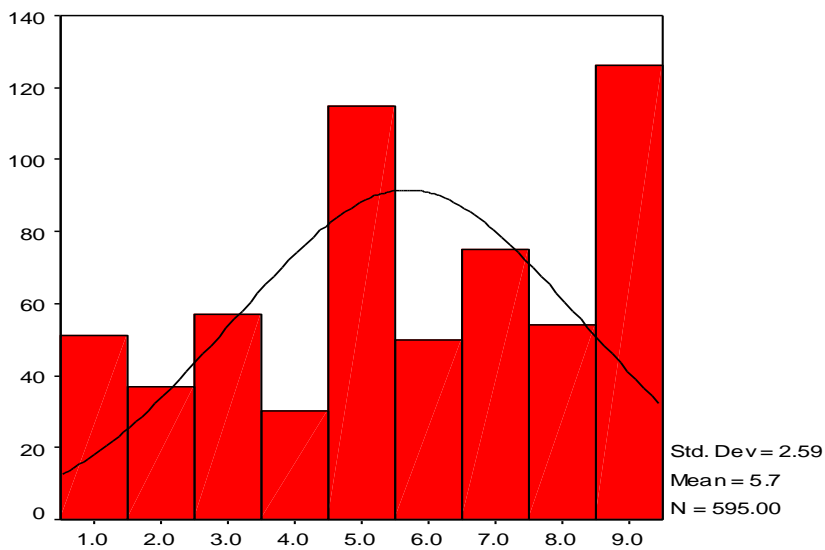
Q30. I do not think about how much energy I use at home.



Q31. I think we should develop nuclear power to supply energy to the region.



Q32. I do not understand how carbon emission trading schemes work.



The 2008 Community, Environment and Sustainability Study

Who should complete this survey?

The person over the age of 18, who normally lives in the household, whose birthday falls next. (We do this to ensure the people in our survey are randomly selected.)

How to complete this survey

On the following pages there are a number of statements on which we are seeking your opinion.

We must stress that there are no right or wrong answers and we encourage you not to spend too much time on any one question.

Please indicate how much you **disagree** or **agree** with the statement by circling the number that best represents your view.

The number "5" lies in the middle of the scale. If you **neither agree nor disagree** with the statement you should indicate "5" as your choice.

Strongly Disagree Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	--------------	---	---	---	---

Section 1

1. The continued loss (extinction) of native plants and animals concerns me.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

2. I would like to see a complete halt to land clearing.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

3. I would like to see more trees and native vegetation in the region.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

4. Protecting the environment is more important than a strong economy.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

5. Farmers should be allowed to grow genetically modified crops if it helps continue farming.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

6. Coastal Western Australia is in danger of being over-developed.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

7. Farmers should be allowed to clear the land that belongs to them.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

8. On balance, WA's natural environment (coastline, rivers, soils, water and land) is well managed.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

9. Conservationists and 'greenies' don't realise how important the economy is to our survival.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

10. There is a strong sense of community in the place where I live.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

11. Better management of coastal areas will benefit me personally.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

12. I am very involved in my community (e.g. sports, service clubs, volunteer organisations etc)

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

13. My community will suffer if the environment is not looked after.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

14. I would like to do more work in my community but I'm too busy.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

15. Governments should do more to look after the environment.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

16. Better management of agricultural lands will benefit my community.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

17. I support immigration programs that bring more people to regional Australia.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

18. Businesses, including farmers, and developers must do more to look after our natural environment and wildlife.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

19. I believe that human activities are affecting the climate now.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

20. In the last 12 months I have taken actions to reduce my impact on the environment.

Strongly Disagree

Strongly Agree

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

21. The effects of climate change will be very serious for our region.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

23. Adapting to climate change will bring business opportunities to my community.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

24. Climate change does not affect me directly.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

25. I believe human activities affect the climate beyond the cycle of droughts that occur naturally in Australia.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

26. Climate change is not a real problem.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

27. I am making an effort to use my car less than before.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

28. I take actions to leave the environment in better shape than it is now.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

29. Conflicting information about climate change makes it hard to know whether it is actually happening.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

30. I do not think about how much energy I use at home.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

31. I think we should develop nuclear power to supply energy to the region.

Strongly Disagree

Strongly Agree

1 2 3 4 5 6 7 8 9

32. I do not understand how carbon emission trading schemes work.

1 2 3 4 5 6 7 8 9

Section 2

33. Which of the following organisations do you know of?

(Please tick ALL that apply)

- Department of Agriculture and Food, Western Australia
- Landcare Australia
- Avon Catchment Council
- Department of Transport and Mining Council
- Department of Environment and Conservation
- Greening Australia
- Northern Agricultural Catchments Council
- Department of Land and Water
- Animal Resources Authority

34. When the term "BIODIVERSITY" is used, what do you think is meant by it?

(Please tick ONE box only)

- Keeping a natural balance
- Making sure that we diversify our agricultural practices ("grain and graze", more than one type of crop, etc.)
- The ecological and natural balance between all native organisms (animals and plants)
- Conserving and protecting native vegetation
- Trying to improve the environment so that it gets back to where it was
- Other (please specify) _____

35. When the term BIOSECURITY is used, what do you think is meant by it?

(Please tick ONE box only)

- Keeping things natural by protecting all organisms (animals and plants)
- Stopping weeds and diseases spreading
- Keeping Australia safe from terrorism
- Protecting farms from pests and disease
- Keeping pests and diseases out of places they don't belong
- Stopping diseases from spreading to Australia
- Other (please specify) _____

36. When the term "SUSTAINABILITY" is used, what do you think is meant by it?

(Please tick ONE box only)

- Being able to keep going the way things are
- Being able to keep on making a living in the region
- Making sure that industry and farms are profitable in the future
- Making sure people and towns are prosperous while looking after the environment
- Keeping things natural by protecting animals and plants
- Other (please specify) _____

37. What do you think is the main purpose of The NORTHERN AGRICULTURAL CATCHMENTS COUNCIL (NACC)?

(Please tick ONE box only)

- Helping the government distribute funds to farmers
- Monitoring waterways, water quality and rainfall in the region
- Working with people and communities to advise and assist them to manage their lands better
- Buying land in order to conserve and protect native plants and animals.
- Don't know
- Have never heard of it

38. What is your normal occupation?

(Please be as specific as you can, e.g. Sales Manager - real estate)

39. If you are retired or currently not working what was/is your normal line of work?

(Please be as specific as you can, e.g. Consultant - agronomist)

40. If you live on a farm, please state the approximate size of the property that you own or manage?

_____ ha or _____ acres

41. Female Male

42. Age 18-19 20-24 25-29 30-34 35-39 40-44 45-49
 50-54 55-59 60-64 65-69 70-74 75 and over

43. Have you ever been part of a program run or managed by the Northern Agricultural Catchments Council (NACC)?

- Yes
- No
- Not sure.

If YES what was the project? _____

44. Have you ever been involved in any land, coastal or waterways management programs run by an organisation other than the Northern Agricultural Catchments Council?

- Yes
- No
- Not sure.

If YES what was the project? _____

Which organisation ran that project? _____

45. Which of these best describes the place in which you live:

(Please tick ONE box only)

- A flat
- A house on a block of land in, or close to town
- A house on a large block out of town
- A farm
- Other Please Specify _____

46. Which of these best describes your living arrangements?

I live alone:

- Yes
- No

I live with children under 15yrs of age:

- Yes
- No

47. What is your highest qualification?

- Some high school
- Finished high school
- Some education after high school e.g. TAFE or University
- Finished studies at TAFE or other training course
- Studied at university
- Completed a university degree

48. How long have you lived in the region? _____ Years

49. Would you like a brief summary of the survey results sent to you? Yes No

If YES, please provide your postal or email address.

Email _____

Thank you for taking the time to complete this survey.

The information you provided will assist us in the planning and delivery of programs aimed at making living and working in Regional Western Australia more sustainable.

Please add any comment that you think might be relevant to our study. For example, are there any environmental or community issue you think should be addressed in future.
