

Integrated Catchment Management Pilot Project: Evaluation Report

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Table of contents

Executive summary	iii
1 Introduction	1
2 Evaluation	1
3 This report	2
4 Adoption of innovations	2
5 ICM: Factors that encourage change	4
6 Findings from participating farmers	5
6.1 Public meetings	6
6.2 On-farm visits	9
6.3 Field days	12
6.4 Farm plans	12
7 Findings from non-participant farmers	17
8 Findings from industry representatives	18
9 Findings from the facilitated meetings	20
10 Concluding comments	22
References	24

List of tables

Table 1: Summary of positive factors and barriers	5
Table 2: Non-participant farmers' awareness of project, and attendance at meetings and field days	17

Executive summary

Background

In September 2006, Environment Waikato began piloting the Integrated Catchment Management (ICM) project. This intensive policy implementation process occurs within two of the region's catchments - Little Waipa and Waipapa. It focuses on working with farmers, to change or improve their agricultural practices which are contributing to rising nitrogen levels within the Upper Waikato River's catchment, specifically by ensuring compliance with consented and permitted activities and by encouraging a suite of identified best practices to mitigate nutrient losses (Ritchie, 2007).

The project has included public meetings, on-farm consultation with individual farmers, the development of in-depth farm management plans, field days, and workshops, ongoing email, newsletter and phone contact with farmers, and 'cold-calling' both via phone and on-farm to discuss the project with farmers.

Evaluation

Ruth Hungerford of Momentum Research and Evaluation was asked to evaluate the ICM project to determine the strengths and areas for improvement. The evaluation was formative, designed with a flexible methodology, took place alongside the project and fed back into it as it progressed.

The evaluation activities included two series of face to face or phone interviews with participating farmers who had had, at least, one on-farm visit as part of the project (n=11), phone interviews with non-participating farmers (n=8) and fertiliser industry representatives (n=4), analysis of spreadsheet data and Farm Plans, observation at an on-farm visit, and facilitated meetings with ICM staff. The results of the evaluation activities have been fed back in a series of reports, a presentation to the ICM technical group and informally via phone and email.

The following is a summary of the key evaluation findings from the past two years.

Key findings

- Participating farmers were very positive about the ICM project. They appreciated that the project worked *with* farmers and was focused on each farm, individually, and they considered that the staff were 'the right people for the job' because they were able to communicate with the farmers, were good at listening, and understood the importance of working with the farmers – not telling them what to do.
- Participating farmers reported that they had a more positive view of Environment Waikato as a result of the ICM project process. Prior to the project they stated that their views had been either negative or neutral.
- Staff noted that building relationships with farmers is of key importance to encourage change. The staff spend time with farmers on-farm¹ and have ongoing communication over time, via phone and email. The evaluation found that the on-farm visits are invaluable as they enable staff to have good quality, face to face discussions with farmers, and to build positive relationships.
- The industry representatives were also positive about the ICM project. They considered that it gave Environment Waikato a positive profile and provided

¹ As a general guide, the first on-farm visit takes around two to three hours, with subsequent visits to discuss the Farm Plan being of a slightly shorter duration.

important information to farmers. The skills of the staff in being able to engage farmers were identified as contributing to the success of the project.

- The majority of the non-participating farmers interviewed had heard of the ICM project indicating a good level of awareness within the catchment. The main reason for not participating was a perception that the project was not (seen to be) relevant to their farm. Staff have used this information to assist with determining ways to engage these farmers.
- Participating farmers are making many of the changes to practice suggested by Environment Waikato. Findings show that farmers are most likely undertake a suggested action if they perceive it will not take much time to implement, is not costly, and is either cost effective or will not negatively affect production.
- Barriers to changing practices include situations where farmers considered that they are already making progress, for example, in their fertiliser use so are unlikely to take on a recommendation to further limit nitrogen. Other factors affecting uptake include the topography of the farm (for example hilly country unsuited to travelling irrigators) and financial constraints (for example unable to afford to build a feed pad). Some farmers were also not convinced that the 'science' was accurate and this perception was a hindrance to change.
- These findings are consistent with other research in the area of adoption of farm practices and new technologies which has found that the adoption of different innovations within the farming sector is affected by a mix of biophysical factors (for example topography, soil type, rainfall) and socio-economic factors (for example availability of labour or time, financial resources, the current layout of the property) as well as the recognition that there is a need (or problem) and the belief that the solution being proposed is the best one (Kaine and Johnson, 2004). Thus an approach which offers solutions tailored to the farm context facilitates adoption. However, for some practices the likelihood of no benefit to the farm's operation continues to be a hindrance to adoption.
- The evaluation highlighted early on the need to develop ways to handle any compliance issues without damaging the good relationships that were being built with farmers. This led to staff clarifying their roles both internally and with farmers and an agreement between the Resource Use Group and ICM for managing compliance within the catchments.
- Staff have also developed stronger relationships with other key partners in the farming sector, thus increasing the amount of people working with farmers who are aware of what Environment Waikato is hoping to achieve in the catchments.
- An unexpected positive spin off of the project is that farmers are phoning staff about issues other than ICM, indicating that farmers are viewing the ICM staff and Environment Waikato as a trusted source of information. This is likely to positively impact on rates of adoption of best practices and rates of compliance with Environment Waikato rules as the farmers are likely to seek out staff, whom they have got to know and trust, when they are keen to make changes and / or when an issue arises on-farm that may impact their compliance.

Overall the findings indicate that the ICM project is increasing the rate of adoption of best practices in the Little Waipa and Waipapa catchments by working one on one with farmers to identify issues, highlight the need for change, and provide tailored advice and support for making the required changes. In addition, compliance with Environment Waikato rules is being met as ICM staff work through any issues with participating farmers. The ICM project is viewed positively both by farmers in the catchments and industry representatives. Farmers appreciate that Environment Waikato is working with them and that the project focuses on their farm as an individual operation, and they

have developed a more positive view of Environment Waikato as a result. Farmers are willing to adopt many of the suggested practices and where barriers exist, staff continue to work with farmers to address these. The project has also resulted in innovative and positive changes to internal processes in Environment Waikato and has led to the development of stronger relationships with external industry partners.

1 Introduction

In September 2006, Environment Waikato began piloting an intensive policy implementation process within two of the region's catchments - Little Waipa and Waipapa. This process, the Integrated Catchment Management (ICM) project focuses on working with farmers to change or improve their agricultural practices which are contributing to rising nitrogen levels within the Upper Waikato river's catchment, specifically by ensuring compliance with consented and permitted activities and by encouraging a suite of best practices identified to mitigate nutrient losses (Ritchie, 2007).

The ICM pilot project has included public meetings in the two catchments, on-farm consultation with individual farmers, the development of in-depth farm management plans, field days and workshops with farmers in the catchments on specific management options, and ongoing email, newsletters and phone contact with farmers.

There are approximately 120 farms in the two catchments. Since the project began, and up to August 2008, 35 farmers had been contacted (15 in Waipapa and 20 in Little Waipa). This represents 39 farms, or one-third of the total farms, as some of the farmers have more than one farm. Of the 35 farmers, 15 have had a first on-farm visit from the Environment Waikato staff, eight farm plans have been completed, and seven plans are currently in progress.

The ICM staff continue to contact farmers to encourage them to become involved in the project and since June 2008 this has involved 'cold-calling' both via phone and on-farm to discuss the project with farmers. This has shown a positive response with people who had not previously been involved with the ICM project.

2 Evaluation

At the beginning of the project Environment Waikato contracted Ruth Hungerford of Momentum Research and Evaluation to assist with evaluating the process in the two catchments to determine the strengths and areas for improvement of the ICM process. It was also requested that the evaluation be structured in such a way that the findings could be fed back into the project as it progressed. The evaluation methodology was therefore formative, rather than summative, needing to be able to be adapted to a project that was evolving and changing.

The evaluation activities have included interviews with both participating and non-participating farmers, interviews with fertiliser industry representatives, analysis of spreadsheet data and Farm Plans, observation at an on-farm visit, and facilitated meetings with ICM staff. The results of the evaluation activities have been fed back in a series of reports, a presentation to the ICM technical group and informally via phone and email. The following summarises the evaluation activities and reporting that has occurred over the past two years.

2006/2007 Interviews with all (4) farmers who had participated (3 on-farm and 1 by phone).

Report of the interview findings submitted July 2007.

2007/2008 Meeting with the ICM staff facilitated by the evaluator to process learning to date.

Summary report of the meeting submitted November 2007.

Analysis of the on-farm visit data recorded by staff on to an EXCEL spreadsheet.

Report on barriers and benefits based on the EXCEL data submitted January 2008.

Observation of a farm visit, debrief with staff and recommendations regarding questioning techniques.

Summary write-up of on-farm visit and recommendations submitted April 2008.

Telephone interviews with seven participating farmers², eight non-participating farmers, and four fertiliser representatives who had attended on-farm visits.

Report of the interview findings submitted August 2008.

Presentation of key findings September 2008

Meeting with the ICM staff facilitated by the evaluator to process learning to date.

Summary report of the meeting submitted October 2008.

3 This report

This document amalgamates the key findings from the four key reports completed over the past two years and also includes other information from relevant literature. The report is divided into the following sections.

- Section 4 Adoption of innovations: brief summary of key points from literature related to adoption of new technologies and practices in the agricultural sector.
- Section 5 Encouraging change: summary of some data from 'barriers and benefits' report.
- Section 6 Findings from interviews with participating farmers.
- Section 7 Findings from interviews with non-participating farmers.
- Section 8 Findings from interviews with industry representatives.
- Section 9 Findings from facilitated meetings.
- Section 10 Concluding comments.

4 Adoption of innovations

The following briefly summarises key points from studies about the voluntary adoption of new practices and technologies (or innovations) in the agricultural sector that are relevant to the findings of this evaluation. Farmers participating in the ICM project do so voluntarily and recommendations in the Farm Plans are not binding, though compliance with Environment Waikato rules is expected.

Kaine and Johnson (2004) note that "the objective of much of agricultural and natural resource management policy is to change the behaviour of primary producers often by encouraging them to adopt new technologies and practices" (p. 15). This objective is

² These seven farmers were different farmers to the first four who were interviewed, so out of the total of 15 farmers who had had a first visit by June 2008, 11 have been interviewed for the evaluation.

consistent with the objective of the ICM project, which is essentially to encourage farmers to make changes to their farming practices in order to have a positive impact (long-term) on nitrogen levels in the Upper Waikato Rivers' waterways. This may include, for example, reducing the amount of fertiliser applied, wintering off stock, changing effluent management practices, building feed pads, or using new technologies such as nitrogen inhibitors. Some of these practices are subject to the regional council's rules, either consented or as permitted activities.

In the past, technology transfer models of extension practice have assumed that all farmers are in the position to adopt a new innovation and by doing so will receive the expected benefits (Davies et.al., 2007). However, Kaine and Johnson (2004) describe how farming systems theory and consumer behaviour theory can be applied to the voluntary adoption of agricultural innovations to show that in fact adoption rates are variable across a population, because in practice not every farmer can adopt, or sees benefit in adopting, a specific practice into their farming system.

Informed by Consumer Behaviour theory the authors reason that a farmer's adoption of an agricultural innovation, whether this be purchasing of a product or changing a farming practice, is a 'high involvement purchase', as it typically requires considering a new or novel approach which will in all likelihood have an impact on the farm's system and financial performance.

High involvement purchases are characterised by 'complex decision-making'. This type of decision-making typically has the following four key facets:

1. Need recognition (that is recognising the need for an innovation because of receiving new information, an experience, or a change in circumstances or the environment).
2. Information processing (that is gathering information about the 'options', their costs and benefits, and then determining which is best suited to the need).
3. Product evaluation and purchase (that is choosing a particular innovation and purchasing or putting that into place).
4. Evaluation (that is evaluating whether the innovation works or not) (Kaine and Johnson, 2004, pp 4-5).

Farming Systems theory suggests that the farming system will determine the likelihood of farmers' ability to adopt an innovation such that factors relevant to adoption of an innovation are the interplay between biophysical factors (for example topography, soil type, rainfall) and socio-economic factors (for example availability of labour or time, financial resources, the current layout of the property) (Crouch, 1981). For example, a farmer with limited cashflow may be less inclined to build a standing off pad. Research by Davies, Kaine and Lourey (2007) also noted the relevance of farm context to innovation uptake. In their study, for example decisions about effluent applications were influenced by factors such as dairy shed position, slope, and linkages to existing irrigation systems.

As a consequence of looking at rates of adoption and diffusion of different innovations in this manner Kaine (2008) states that:

In principle, an innovation might satisfy different needs for different producers. Consequently, different producers might adopt an innovation for different reasons. This suggests the population of potential adopters of an innovation can be classified into segments based on differences in the reasons, or combinations of reasons, for adopting the innovation (Kaine, 2008 p.8).

Kaine and Johnson (2004) suggest that a mix of different approaches may be required to assist the adoption of different innovations, because different people will respond to different techniques; (for example some farmers are interested in field days and new

technologies while others respond better to subsidies or, where voluntary adoption is unlikely and the practice is deemed necessary by regulators, changes to regulations).

Further to this Davies et al. (2007) found, amongst the dairy farmers they interviewed, a frustration with situations where they were being required to comply with regulations, but were unable to easily access specific and unbiased advice and/or technical support to assist them to achieve this, indicating a need to have a mix of approaches to facilitate compliance.

Summary

The literature reviewed highlights how adoption of innovations within the farming sector is affected by a mix of biophysical and socio-economic different factors. Determining effective ways to get farmer engagement and adoption includes establishing what benefits will be gained by particular segments of farmers and using this understanding to raise awareness and recognition of a need for the innovation. Increasing the rate of uptake of an innovation may require a mix of different approaches, for example providing advice through programmes such as ICM and incentives such as Clean Stream funding. However, it should be noted that there may still be a number of farmers for whom the uptake of new practices and technologies does not easily fit with their current farm context.

5 ICM: Factors that encourage change

As part of the ICM project the staff have been recording information gathered from the visits on to an Excel spreadsheet. The spreadsheet has nine sections plus a summary section. These sections are: physical description of the property, description of the operation, nutrient aspects, effluent aspects, environmental hot spots, water aspects, soil aspects, animal aspects, SLOT analysis. Within each section is a place to record advantages, disadvantages, barriers to change, comments and other observations and within the summary section are places to record positives, non-complying activities, opportunities, barriers, and follow up by Environment Waikato.

Table 1 summarises the key factors that are either 'positive' or are 'barriers'. The data for this table was collated from the Excel file (data retrieved, January 2008). The data was analysed and coded into one of four categories - environmentally focused practices, farm factors, farm management practices, and farmer characteristics / beliefs.

The positive factors are those which the analysis suggests may encourage change to occur or make it 'easier' for change to occur. For example, having some environmentally focused practices indicate a willingness to consider the environmental impact of the farm, which increase the likelihood that the farmer is interested in listening to suggestions for action to further minimise negative environmental impact.

The barriers are those factors that inhibit change or make it more difficult for change to occur. For example, physical factors such as poor drainage or leaving farm management to staff who may be less cognisant of the environmental issues or actions being recommended, may inhibit the extent to which the suggested actions are either taken up or implemented appropriately.

Table 1: Summary of positive factors and barriers

Positives	Barriers
<i>Environmentally focused practices:</i> (for example member of a Stream Care group; planted streams; retired wetlands; recycles effluent; proactive with managing waterways)	<i>[lack of] Environmentally focused practices</i> (for example unfenced areas; wetland areas not protected)
<i>Farm factors</i> (for example free draining, good mix of contour and flat; not prone to pugging)	<i>Farm factors</i> (for example steep, dries out, pumice soils, difficult to determine the best system for the farm)
<i>Farm management practices</i> (for example winter effluent storage; regular soil testing regime; modern facilities; good size effluent block; farmer / manager has hands on involvement; no labour or staffing issues; reliable staff)	<i>Farm management practices</i> (for example staffing issues, farmer or manager less hands on, high leaching from winter cropping, reluctance to change some practices)
<i>Farmer attitudes/beliefs</i> (for example willing to discuss concepts; evidence of accessing consultants; interested in Land Use Change or Capability)	<i>Farmer attitudes/beliefs</i> (for example negative views of Environment Waikato: view that pollution is not as bad as it is made out to be, belief that current practices are environmentally friendly, distrustful of the science, negative views of urban perceptions)

6 Findings from participating farmers

Information from the interviews with the 11 farmers who had participated in the project, were collated and analysed for key themes. The findings are presented below. Quotes are presented in italics. Where there is more than one quote listed, each quote is from a different participant. As the farmers were interviewed at different stages of the project (four in July 2007 and seven in July 2008), the notation 07/07 or 07/08 has been put after each quote to indicate which series of interviews they participated in.

Opinion of the ICM process

Farmers were asked to comment about the ICM project as a way of working with farmers. Overall results from both series of interviews were positive. Most farmers appreciated the staff coming out to them, and their farm, and spending the time listening to what they were working towards on their farm. The ICM process of working *with* farmers on an individual farm level, rather than *telling* farmers or working in a less individual farm based way, was viewed as a good way to proceed

It's good. It's highlighting a concern, an awareness.

Participating Farmer (07/08)

They've made the effort and came out to our place. ... It's good. A good starting point. Great. It's the way to do it. More hands-on. Knowing where you stand from the start.

Participating Farmer (07/08)

The idea is alright. I don't know how else they could do it. They are very very right.

Participating Farmer (07/07)

One farmer considered that in order to be effective in managing the environmental issues there had to be a partnership between farmers and regional councils and that the ICM project was assisting with developing that partnership.

[The ICM project] has gotta be good for that same reason, because environment and farming have to come up with a win-win situation. You can't do that if you don't have a partnership to start with.

Participating Farmer (07/08)

Two farmers commented on how the process could be improved or how more farmers could be engaged in it. Environment Waikato needing to be persistent was a theme from these two farmers. Both farmers noted the value of talking to farmers face to face. One was of the view that as more farmers got involved and had a positive experience, and others became aware of it, then this would translate to a greater level of engagement in the project from others in the catchment.

It has to be face to face. It might feel like they are talking to a brick wall for a while with the farming community. But the more it gets out there that people are having good experiences with them, and they feel Environment Waikato is coming from a point of view of support, then they'll get more engagement.

Participating Farmer (07/08)

Why others may not participate? Don't know. Maybe they aren't farming very well. Maybe they're guilty. Have something to hide. Cockies can be the worst people sometimes – stick their head in the sand and not look at other options. If it's optional they won't do it. Don't know how to get through to those guys. Maybe just have to keep calling them, going out to see them.

Participating Farmer (07/08)

6.1 Public meetings

In November 2006, the ICM project staff held a public meeting in each catchment to introduce the project. All four farmers in the first series of interviews had attended the public meeting in their catchment, and five of the seven farmers from the second series had attended a public meeting. The farmers were asked a number of questions about the public meetings, including why they attended and what they thought of it³.

Why they did or did not attend

Farmers went to the public meeting for the following reasons:

- they considered it was important to know what Environment Waikato was planning for their area

You have got to go because you're affected; because that's how you find out the information.

Participating Farmer (07/07)

We do get more and more people trying to have an influence on how we're farming and what we're doing. Getting a bit overloaded with this sort of stuff, and it all takes time and input. I foresaw what was being discussed – I believe that in time it may become less voluntary - so it's good to find out what is happening now.

Participating Farmer (07/07)

³ Note: the farmers in the first series of interviews were asked some detailed questions about the public meetings which had been held relatively recently (that is 6 months prior to the interviews). The farmers in the second series of interviews were not asked such detailed questions as there was a greater time lapse since the meeting (18 months) and there had also been other meetings and field days within the catchment in that time, and as such, it was felt that their recall of specifics from one meeting, would be less reliable .

Someone from the farm went [to the November 2006 meeting]. [Because] we were interested in what they're planning – get in and find out what it was all about.

Participating Farmer (07/08)

[I went out of] curiosity. Anything that Environment Waikato do, the alarm bells go on.

Participating Farmer (07/08)

We'd been working with them on our farm– just trying to get a starting point. [We went to the meeting because] we were interested to see what was going on.

Participating Farmer (07/08)

- they were active in the area of nutrient / effluent management (for example are members of a stream care group; have their own farm plans; are environmentally focused)

I have got the environment at heart. Need to make the changes now for the future.

Participating Farmer (07/07)

If you're part of the cause, you need to be part of the fix.

Participating Farmer (07/07)

Caring for the environment is important for farmers.

Participating Farmer (07/08)

We are custodians of the land. We are happy to be proactive. I am a greenie!

Participating Farmer (07/07)

I am part of the [environmental] group, so do have an interest in what they're trying to do here.

Participating Farmer (07/07)

- had some specific issue on their farm that they hoped would be answered at the meeting;

[We had] some things we have been working on, on the farm.

Participating Farmer (07/08)

The two farmers from the second series of interviews who did not attend a meeting gave the following reasons for not attending:

- that they were busy with other work,
- and/or it was not of interest to them
- and/or it was not a priority at the time.

Two farmers from the first series of interviews made the comment that at their meeting "some of the farmers who should have been there weren't there". The farmers who did not attend were ones that, in their opinion, were not environmentally focused. When questioned further, they did not have any suggestions as to ways in which the less interested farmers could be encouraged to participate.

The problem I see is that farmers that need to be targeted are not the ones that would come voluntarily or that are being proactive. And how you involve them, I don't quite know. People who went to the meeting were

probably actively involved in nutrient management and stream care. They are aware of the impact and open to progressing things.

Participating Farmer (07/07)

The findings regarding participation are consistent with Kaine and Johnson's (2004) premise that need recognition drives information search behaviour whereby the farmers who went to the meetings did so because they perceived a benefit to themselves (for example had a particular issue in mind or were wanting to know what Environment Waikato was 'up to').

Opinions of the meeting

Of the farmers who had attended, most were positive about the public meetings, the timing of them, and how they were run.

It was very informative. A good turn-out. Good time of the year too- not too busy. Meeting was very informative.

Participating Farmer (07/08)

I thought it was fairly good. It was a first off approach – a time to discuss and ask questions. Being a first meeting it would be informal, rather than trying to impose things on us. They had some clear goals about what they were trying to achieve.

Participating Farmer (07/07)

One farmer from the second series of interviews was of the contrasting view, stating that, in his opinion, the first meeting in his catchment had contributed to some farmers not wanting to engage with the project. Although this had not put him off being involved he was concerned that others had been put off.

That meeting wasn't good. They came to say "this is what we going to do" and they didn't have reasons for what they wanted to do. It put some people off. A few people got their backs up and that was the end of it. From day one they've struggled to get people alongside them.

Participating Farmer (07/08)

The four farmers from the first series of interviews, who had all attended a public meeting, were asked to rate the meeting on a scale from 1 to 5, with 1 being poor and 5 being very well run. Ratings ranged from 3 to 3.5 with one rating it three and the others 3.5 out of 5. There were some useful suggestions made for fine tuning future meetings. These included:

- having a chairperson to speed the process up;
- not getting too bogged down in some of the detail;
- ensuring that Environment Waikato staff interact with the farmers, not amongst themselves.

Farmers in the first series of interviews were asked to comment on their understanding of the purpose of the meeting and any new information they had gained from the meeting. There was a clear understanding from all four farmers, that it was a pilot project and was about water quality. However, there was some confusion expressed about some of the information (that is whether fertiliser application was the main problem or effluent management), although there was a perception by some, that the local farmers had discussed it further, since the meeting, and were "up to speed now."

It's a pilot project. It's a new project. If it looks after the water it's good. They talked about fertiliser and N [nitrogen] in particular but I came away thinking they don't really know. What was the aim? What did they want us to do?

Participating Farmer (07/07)

People got the perception that fertiliser was the problem. Some people didn't catch on. It's a urine problem.

Participating Farmer (07/07)

When asked if questions were adequately answered at the meeting, farmers replied that most questions were answered.

Yes I believe that they had a good explanation for people's queries.

Participating Farmer (07/07)

Farmers did, however, still have some questions which they would have liked answered. These were primarily about acceptable levels of nitrogen and other nutrients in the streams, and primary sources of these.

What is an acceptable level of nitrogen in [stream]? They can't tell you. What does the power station contribute?

Participating Farmer (07/07)

What we don't know is the affect of fertiliser run-off, with Environment Waikato – some of the information they could give us is lacking. ... more nitrogen comes out of the pines than dairy. ... Rainfall makes a huge difference. Nobody knows the answer. We have really good soils ... how does that affect it?

Participating Farmer (07/07)

Is fertiliser the only problem? How much ends up in the water? Where do the Ag chemicals go?

Participating Farmer (07/07)

6.2 On-farm visits

In the first series of interviews all four farmers had had an on-farm visit, and in the second series, six farmers had had on-farm visits, and one had a visit scheduled for a few weeks time. All 11 were asked to comment on why they'd agreed to a visit, and, where relevant, what they thought of the visit.

Why farmers agreed to be involved

There were a number of reasons given for why farmers had agreed to being involved in the project. For two farmers, timing was a consideration. These farmers had deferred their involvement until they were at a point where they considered they needed further information. One of these was a dairy conversion which was underway but not completed; the farmer wanted to wait until they had made more progress with the conversion and were at a stage where some advice (for example on effluent) would be useful. The other farmer had other priorities to complete, and when they were ready to consider some options for their systems, asked to be involved in the project.

[Environment Waikato] contacted me... What happened there – we were doing a dairy conversion – so I thought it best to meet after it's completed. I wrote and asked them to defer it. ... There's going to be some changes with the dairy conversion so [now] I want to know what we can do, need to do, now that the dairy conversion has happened.

Participating Farmer (07/08)

We were [at a point on the farm, with our planning, where we were] ready were for [the ICM staff] to come – we knew we had a few things to improve on – things to be done. It was a matter of finding out where they see we are at and their ideas. It's a partnership.

Participating Farmer (07/08)

Two farmers agreed to be involved in the project because they could access some Clean Streams funding. One of these farmers also stated that he believed there would be a time in the future where the actions would become compulsory, and he wanted to “get in early” while there was still some funding to do some of the actions required.

I would like to think that we were a forerunner in these initiatives without any pressure from Environment Waikato – got some areas fenced off and planted. To keep stock out of the streams. I want to do it while there is some funding to do it – get in early – because they might say in a few years that you have to do it and you have to pay for it.

Participating Farmer (07/08)

We’ve got a stream and I was wanting – heard I could get subsidy for fencing and tree planting – we have this stream, because I don’t like stock getting into water ways. Don’t like stock in a river and thought the trees would look good. That was my motive. Could get something for nothing and I want some money. Then we went further up the farm ... talked about potential issues. [The ICM staff member] took some photos of potential erosion areas

Participating Farmer (07/08)

Other reasons farmers gave for agreeing to the visit were because they wanted some information about nutrient management for their farm, or that they were curious about what Environment Waikato had to say. One farmer had the pragmatic view that the visits would happen anyway so they might as well get involved now.

They were going to do the visits anyway so they might as well do them on our farm.

Participating Farmer (07/08)

Several reasons. One was for more on-farm better nutrient management. Curiosity about where they were coming from and how they were trying to prove what I was doing wrong. They were trying to get alongside and work that way – rather than the heavy handed approach.

Participating Farmer (07/08)

Opinion of the visit

Overall farmers’ comments reflected that they found the on-farm visit enjoyable, useful and informative, and even if they did not agree with everything the staff talked about, they at least, could discuss it face to face with them.

We had plenty of time to talk and look around and we could show them the bits we were interested in. They came up with some things. We have a lot of water – springs and streams – they had some ideas there. We are now waiting for the plan.

Participating Farmer (07/08)

The visit – quite enjoyed it – informative. Wouldn’t agree with everything. But [the staff] know that. [The staff are] very approachable. But we could at least talk about it.

Participating Farmer (07/08)

[It was] really good. There was a trustee from the trust there too. [The ICM staff] were open and easy to talk to. Not looking to pick holes – looking to get a starting point. We needed to know where we were at and so did they.

Participating Farmer (07/08)

It was good. I had a good time. I went along with them [around the farm]. I learnt a lot. Particularly when they looked at the soil structure, and the sidings

Farmers were asked a number of questions about the farm visits, including their expectations of it, and what they thought of it.

All farmers agreed that the farm visit was what they expected; that is that the purpose of the visit was to gather information on the individual farm, and, in their opinion, that is what occurred.

It was an information gathering [exercise] and that was exactly what it was.

Participating Farmer (07/07)

Basically it was fact finding time for Environment Waikato to find out how we operate and what level of input we use, and had a look at our nutrient budget, and he was going to take that away and do some analysis on it and send a report back.

Participating Farmer (07/07)

Farmers were keen to get a greater understanding of how their farm was faring and to know facts about nutrient leaching, run off, and how their farm's soil quality, topography, and their farming practices impacted on the amount of leaching that occurred. The soil tests were particularly interesting to two of the farmers, one of whom wanted to get a copy of the test criteria that was used.

We have been very [proactive] in getting our soil right. We had a pasture sample done and it was perfect. The herbage analysis was excellent – meant that what we were putting on was being taken up by the plant. We got 25 points – we just had a few less worms that day.

Participating Farmer (07/07)

We went for a look around the farm and did some soil analysis which was interesting. Everything checked out very well so that was good to know.

Participating Farmer (07/07)

Opinion of the staff

Although there were no specific questions asked about the ICM staff, farmers from both series of interviews commented about the staff during the interview. They stated that they considered them to be 'the right people for the job' because they:

- were able to communicate with the farmers
- were good at listening
- understood the importance of working *with* the farmers – not *telling* them what to do.

[The staff are] good to work with.

Participating Farmer (07/07)

Both of them are really good. Both receptive and they made notes.

Participating Farmer (07/07)

They've got the right people doing it. Got the right people doing it - they've got a good attitude. They are working really hard to get farmers involved.

Participating Farmer (07/07)

It depends on how much we'll see them [Environment Waikato] as a partner at the end of the day. If they are going to use my information as a 'policeman' then it won't work. If it can be 'win win' then it will work. The Environment Waikato staff are good – they work with us.

Participating Farmer (07/07)

[The staff put the information] in a way I could understand it. Put it in layman's terms.

Participating Farmer (07/08)

6.3 Field days

A number of on-farm field days have been arranged by ICM staff during the past two years. Farmers in both series of interviews were asked a number of questions about the field days, including whether they attended a field day and what they thought of it. In the first series of interviews, two farmers had attended the field days in their area, one had hosted, and attended a field day, and the other had not attended any of the field days. In the second series of interviews three of the seven farmers had attended at least one field day. Those who did not attend cited "work commitments", "too busy" or "not a priority" as reasons for not attending.

Most farmers who attended had found the day useful and had picked up new information. The farmer who had hosted a field day said he would be happy to host one again.

Really good. Excellent day.

Participating Farmer (07/07)

Extremely well done. Low application system - the application rates per hour, that was new to me.

Participating Farmer (07/07)

Two farmers from the second series of interviews, who had attended a field day, were disappointed at the low numbers of farmers who attended it.

I went to one [field day]. It's a pity more farmers didn't turn up. Don't know why.

Participating Farmer (07/08)

Disappointing because no one turned up. They are shutting the door altogether. There are one or two vocal people against it [the ICM project].

Participating Farmer (07/08)

6.4 Farm plans

One of the four farmers in the first series of interviews and three of the seven farmers in the second series of interviews had received farm plans and the remainder had not.

Expectations

In the second series of interviews, those farmers who had yet to receive farm plans were asked what they expected the farm plan to include. Most had the expectation that it would include the issues and possible solutions or actions that had been discussed at the on-farm visit. When asked whether they would carry out the possible actions, findings were mixed. Most were happy to consider the suggested actions and to carry out the ones that they perceived as cost-effective, and which they agreed would be useful to manage their nutrient issues. Where they did not intend to carry out the actions the two main reasons were that it would negatively affect production and/or was not cost-effective and/or the action was contrary to their farming practices or philosophy.

Basically what we talked about [during the on-farm visit] – fencing off and planting; effluent – they were going to come up with some recommendations – not sure if the system is quite what we should have – maybe it's too big. Quite happy to have suggestions there because [we're not sure what we can do there].

Participating Farmer (07/08)

The plan will say to increase the effluent field, winter off, and reduce nitrogen. I am definitely not wintering off – our soils are young and it's a catch 22 because the older the soil the more nutrients it holds. Not wintering off because I'd be exporting off the ability to build top soil. I think top soil is really important so I want to keep my cows on farm. Increase effluent field - that's an option. Reduce N - just got to weigh it up with any cost – the bottom line – whether it will affect the production.

Participating Farmer (07/08)

Opinions of the plan and willingness to undertake actions

Of those who had received farm plans, all were positive about their plan. They all considered that the farm plan was accurate about their farm and that it met or exceeded their expectations. One farmer was pleased to see their objectives in the farm plan as this indicated to them, that Environment Waikato staff had been listening to them. Most had read their farm plan, although one admitted that he had yet to read it thoroughly. They could all recall what the identified problems and suggested actions (solutions) were in the farm plan and had either started or were already doing at least some of the actions. Typically the actions that they stated they were doing were:

- ones that they had already begun or planned to do prior to the ICM project process or
- ones that they could see were cost-effective and/or relatively straightforward to implement.

Reasons given for not carrying out particular actions were that the action was not cost-effective and/or it would negatively affect production and/or contrary to the farmer's farming practice or philosophy.

Not a lot different to what we were going to do anyway, so doesn't change it a lot. Using Sustain down there and using it on the other farm. We've always had a fert [fertiliser] budget – always done that. It said a few things about what we shouldn't do. Like not using urea in this three months but that's impossible. I don't think they [Environment Waikato] appreciate how much grass we can grow in winter. We know. We walk the paddocks and know what we're growing. There wasn't a lot in it [the Farm Plan] that we were not going to do. They mentioned tidying up fences on one part, and they do need doing, but the stock are not getting in there. We might tidy it up at some stage, but not because of this [nutrient management] because it won't make any difference because the stock are not getting in there anyway.

Participating Farmer (07/08)

[The farm plan is] probably better [than I expected]. From the perspective of the leaching – what they had as a target and we weren't too bad. [However] there is not the means to reduce it that is cost-effective. [Actions suggested were] Increase effluent area. Not using N in June /July – already limiting that anyway. I am doing them because they easy to do. For myself and for the community as well and if people are skeptical I tell them they don't need to do much to make some improvement. The next steps would become costly – still skeptical about those, and finding ways of making it cost-effective. ... In general it was well done. It gave a good picture of the farm.

Participating Farmer (07/08)

I haven't read it in detail. Thumbed through it and, nothing that I wasn't expecting to see. I am quite keen on building a standing off pad for getting the cows off in bad weather – but more from a management perspective than a 'heal the earth' perspective. [The plan had] most of the things that we had talked about – planting, standing off. We feed Pro-lick – we could adjust our fert [fertiliser] policy, wintering cows off. We could use the nutrient in the

holding tanks a little more wisely. Maybe could look at doing the irrigators if we get a bit more financial. The contour of the farm to get to the irrigators to the flat land, makes it a bigger issue to do than a farm with flat areas all round the shed. Fertiliser – pretty much the fert recommendations are up to [the Fertiliser Representative]. That will be adhered to. Wintering off – I feel that we're putting the problem into someone else's farm. The financial costs of wintering off don't stack up for me. Entrusting them to someone else's care. I would rather keep them on farm so I have the control. In all fairness I haven't thoroughly read the plan but what I did see I thought was realistic, practical, made sense, and was achievable. At the start of the plan, they wrote our objectives, so they had listened and based it on what we wanted to achieve; which was good to see.

Participating Farmer (07/08)

Concerns and questions

There were a number of farmers who had some concerns, either about the cost-effectiveness of some of the suggested actions or about the 'science' about nutrient management that Environment Waikato was promoting with the ICM project.

Got to question the cost of these things ... not one to put my hand up and do all these compliance things. Not sure that it's cost effective to do them.

Participating Farmer (07/08)

Two farmers [at a field day] were skeptical of the 'science' surrounding the nutrient management models.

Participating Farmer (07/08)

[At a field day] someone [from Environment Waikato] had a computer programme that did modeling but didn't know how to use it. Well they did use it but the figures that were coming through were unbelievable. He was challenged on it by some of the farmers and then it fell over a bit. ... I don't feel that the science is there. It comes back to the pragmatic side of things. For idealists the science is there, but it's coming from the view "if farming has to go, then it goes". It needs to be what will work. Maybe farming has to give a little and maybe the environment has to give a little.

Participating Farmer (07/08)

I have debates – query their leaching process. Working with models – not straight facts – that's what I'm struggling with. It takes 50 years for nutrients to leach into the streams and now they are claiming that the dairying is adding to it, but [dairying] has only been intensified in the last 15 years. I have my doubts about the science.

Participating Farmer (07/08)

The importance of providing the farmers with accurate data was emphasised by one farmer as crucial to engaging the farmer's willingness to take some actions.

They have to come up with more facts. If they want us to do something – they have to give us the means of doing it too. No point in giving someone a car and not giving us petrol.

Participating Farmer (07/08)

These findings are consistent with a study by Davies et al. (2007) who found that farmers were frustrated at the lack of specific, useful data to assist them to make recommended or required changes to effluent management.

Opinions of Environment Waikato

In the first series of interviews farmers in one catchment, although not asked specifically about their views of Environment Waikato, expressed the view that Environment Waikato may not be being completely 'upfront' with them. It is important to

note that farmers and residents of this catchment had, in recent times, been 'consulted' with by other organisations and government departments and they had not felt that their views or concerns were taken into account, and in fact, decisions were made that the residents were not supportive of. This has resulted in an understandable wariness of other organisations coming into their area to consult with them.

They [Environment Waikato] should have been more upfront and honest about the underlying reason for the meeting and what farmers should be faced with. That is us having to make some big changes [to how we do things on farm].

Participating Farmer (07/07)

We told them at the meeting that we don't want another consultation like that. We didn't want another consultation like the Ministry of _____.

Participating Farmer (07/07)

Farmers in the other catchment did not have as strong a view, although they still expressed a certain caution about the process; there was a sense of 'watching and waiting' to see what it was about. These views were not unexpected, as this is a new project and farmers will, in all likelihood, be required to undertake some actions on farm that they may not have otherwise considered.

There is reasonable goodwill out there – I think – but we don't quite know if they're telling us everything. What's it all about?

Participating Farmer (07/07)

This wariness was not apparent in the second series of interviews with participating farmers. The seven farmers in the second series of interviews were asked specifically to comment on their relationship with Environment Waikato, and probing questions were used to determine whether this relationship had improved (or not) as a result of the ICM process. Findings indicate that the ICM project has improved the views of participating farmers towards Environment Waikato. Some farmers had had a negative view of Environment Waikato, prior to the project and others had had a neutral view. Most farmers noted that because of the project their opinion of Environment Waikato was now a positive one. They were appreciative of the skills of the staff in working with farmers and building the partnership relationship with them.

It's a good open relationship. I'm quite impressed with the people [Environment Waikato has] got out the front. It definitely makes a difference –who they get – [nutrient management] is an area that people have strong opinions about and strong feelings [so the right people are important]. There are still people who have negative views of Environment Waikato so it takes skills [to be able to work with those people].

Participating Farmer (07/08)

Very good relationship. From the first meeting you could sense they were wanting to come across from a partnership point of view... [My relationship with Environment Waikato] has probably improved because I know more about them, I have a better perception of them. I don't know about the organisation as a whole but I know those individuals [that is the ICM staff].

Participating Farmer (07/08)

We have a pretty good relationship. [Before] I didn't have anything to do with them in all honesty. It probably has improved – getting to know them better. [They are] not as bad as what I think. [the ICM staff] are the right people [for the work] – practical thinking.

Participating Farmer (07/08)

[I have a] very good [relationship with Environment Waikato]. I haven't got a problem with them. Because of [the ICM staff] – the way they came across – pretty transparent. A lot of cockies think they [Environment Waikato] are the bad guys – but [the ICM staff] are very good to deal with. ... [This project has] certainly changed my attitude [towards Environment Waikato]. Meeting them and hearing where they're coming from. They're just doing their job like anyone else and it's all for the good of everybody.

Participating Farmer (07/08)

I'm complimentary [about the ICM staff] because they deserve it. I just get involved with my family and the farm then [the ICM staff member] would ring. [The ICM staff member] was quite good at keeping the ball rolling. I have a good relationship with Environment Waikato because I've got nothing to hide. "Just call it as you see it", I said, when we were going around the farm. I would say I have a good working relationship with Environment Waikato . I don't cringe when I hear the name Environment Waikato . I didn't before because I have nothing to hide. [Improved relationship?] Yes – now when I think of Environment Waikato I think of [the ICM staff member]. [Environment Waikato] now has a face.

Participating Farmer (07/08)

Positive. This process [ICM project] has helped to make it a positive view because if you have no dealings with Environment Waikato , then it's just what you read in the newspaper [which is negative]. ... It's working. We don't feel put upon.

Participating Farmer (07/08)

One farmer gave an example of a situation that occurred on-farm, for which they contacted the ICM staff about. The farmer noted that because the staff had been out to the farm as part of the project, they knew the situation, understood the problem, and took actions to solve the problem. This finding highlights an unexpected spin-off of the project and one that has been reported anecdotally, by ICM staff. That is that participating farmers now have a relationship with Environment Waikato, (and the ICM staff specifically), and will proactively make contact when they have an issue or concern, even if it is not specifically related to nutrient management or water quality.

We had an issue ...and [we] rang [the ICM staff] and they got straight on to it. They knew us and they knew the situation. They didn't have to do that.

Participating Farmer (07/08)

Overlap of roles

An issue that arose in the first series of interviews was that the Environment Waikato staff who are involved in the ICM project, are likely to notice, during farm visits, other issues on farm that they may need to action in some way or discuss with the farmer, and this may cause some problems with the relationship they are building with the farmer. This is a key issue for the ICM process. The ICM process relies heavily on relationship building to be successful, and as such, it is important that any compliance issues are managed in such a way that any potential for damage to the relationship is minimised.

One option used by staff in managing this is, to ensure, at the first meeting when the ICM process is explained, that it is made clear that the staff member does have certain obligations if they become aware of anything on farm that needs following up. Being up front and transparent about this early on, gives the relationship a credible and honest foundation. Secondly, having processes in place to manage issues that arise is also important, and the project has some internal processes in place to do this. Staff should also be clear with the farmer about what they will have to do about the issue they have noted, and keep them informed throughout the process.

Summary of findings from participating farmers

Overall, feedback from the participating farmers in both series of interviews, about the ICM project was very positive. Key factors were the fact that the project worked *with* farmers, was focused on each farm, individually, and that the Environment Waikato staff were well-regarded and were skilled in building relationships with the farmers. Farmers reported a good relationship with, and when asked said that they had a more positive view of Environment Waikato, which they attributed to the ICM project process. The interviews highlighted some issues to consider when running the public meetings, raised some of the potential barriers to the relationship building that Environment Waikato staff need to be aware of, such as the overlap of roles, and Environment Waikato needing to be transparent.

In terms of undertaking the actions suggested by Environment Waikato, farmers were happy to do so, if they perceived the actions would not take much time to implement, were not costly and would be shown to be cost effective or would not negatively affect production (for example not applying nitrogen in winter). One farmer mentioned the topography of the farm made changes to effluent disposal difficult and wintering off was considered 'not cost effective' by one farmer and seen as 'exporting the ability to build top soil'. Some farmers felt that they were already making progress in the area of fertiliser, and were not likely to take on the recommendation to further limit nitrogen.

Some farmers were not convinced that the 'science' was accurate and this was a hindrance to changing practices.

7 Findings from non-participant farmers

Eight farmers who had not participated⁴ in the project were interviewed. Findings from their interviews were collated and analysed and are presented below.

Awareness of the project

The farmers were asked a series of questions regarding how much they knew of the project, whether they recalled hearing about the initial public meetings, whether they attended the meeting, whether they had heard of the field days and other meetings, and whether they had attended those. The answers to the closed-ended (yes/no) questions were quantified and are presented in Table 2.

As Table 3 shows six farmers had heard of the project and two had not. Five of the six had heard of it via a letter from Environment Waikato, and one via word of mouth. Five of the eight recalled hearing of the public meeting, and of these one had attended. Six out of eight recalled letters about field days and other meetings, and of these one had attended a field day.

Table 2: Non-participant farmers' awareness of project, and attendance at meetings and field days

Question	Yes	No	Total
Heard of the project	6	2	8
Recall hearing of public meeting (Nov 2006)	5	3	8
Attended public meeting (Nov 06)	1	4	5
Recall letters about field days and other meetings	6	2	8
Attended any field days / meetings	1	5	6

⁴ Note: Although some of the farmers had 'participated' by going to field days or public meetings, non-participation means, in this context, not having participated in the on-farm visits / farm plan aspects of the project.

Why they have not participated

Five farmers stated that the main reason for their non-participation was because they did not believe the project was relevant to themselves or their property. The reasons given for why they considered it was irrelevant were:

- small landowner
- have no stock
- don't apply nutrient to the land
- have a fertiliser representative to manage nutrient issues.

Of the remaining farmers one had been too busy to get involved, and one had been to a field day which he had found useful and was interested in further information. The other farmer considered the project was repetitive of the work being done in Taupo catchment and he considered the ICM project a waste of money. The reasons highlight some key points about the perception of the project. Firstly, farmers who do not apply nutrients will still have urine patches and leaching. Secondly, the ICM project provides more in-depth and independent information and advice about farm inputs than fertiliser representatives are able to provide. In both situations the project is relevant to the farm, and as such, these are areas that the project staff could consider addressing in their promotion of the project.

Summary of findings from non-participant farmers

The majority of the non-participating farmers interviewed had heard of the ICM project, which indicates a reasonable level of awareness within the catchment. The main reason for not participating was a perception that the project was not relevant to their farm.

8 Findings from industry representatives

The four industry representatives who were interviewed were all fertiliser representatives, either working for a fertiliser company or as independent consultants to farmers. All except one, who had only been in the role a few months, had participated in the project, and had attended on-farm visits with the Environment Waikato staff. Findings from their interviews were collated and analysed, and are presented below.

Views of the process

The industry representatives were asked to comment about the ICM project as a way of working with farmers. Feedback was very positive. The representatives considered that the process was well-received by farmers, that it provided an opportunity for farmers to gain a more positive view of Environment Waikato and some useful and practical information regarding nutrient management on their farm.

It's a very good programme. It's been well-received. Farmers are happy to participate. They don't see [the ICM staff] as a threat. They are happy to open the farm gates to them and let them look over things. [Why?] They begin to trust the people from Environment Waikato that they are working with. They say "that visit wasn't quite so bad, those guys aren't quite so hard". The perception of Environment Waikato is helicopters etc. This is a more proactive way to work with them, offering practical advice. Not waving a big stick.

Industry Representative (07/08)

Wonderful idea. Something that needs to happen throughout the country, because, for a number of reasons. The farmers are a bit skeptical that the operations they're doing are not having as much of an environmental effect. There's a lot of mis-information and distrust of regional councils. ... The majority of farmers can save money on fertiliser – they are using more nitro than they need to – it's going to save them dollars. The main thing is

with these ICM plans it's looking at the whole catchment and trying to minimise the effects on everyone. Within a whole catchment – if everyone buys into it – those who don't pull their weight then they'll pull them into line, their peers. Rather than regional councils coming in with a big stick. There will be benefits. ... Everyone is bombarded with different ideas as to how much impact farming is having on the environment and most farmers want to do the right thing. They are in it for the long term, but they don't know who to believe. Environment Waikato, forest and bird or the other green move[ments], and at the other extreme is the Federated Farmers. The truth is somewhere in the middle. [Need to] find a conduit to get information to farmers that is unbiased. ... [I] did a farm visit. It's good for the farmer to get an understanding of how farming impacts on the environment.

Industry Representative (07/08)

It's essential. The idea is excellent. It's a pilot. I'm all for it. It's so important. It has to be done. It's more than a pilot. The whole - our whole economic viability and our primary industries and marketing – an important part of it is the maintenance of our environment. We need to understand what is practical for farmers to do. Such a new concept for many people. We called it 'biological farming' to get away from the 'organic' – the word is now 'sustainable' farming. There's not many people that wouldn't agree with it. ... I was reasonably impressed [with the farm visit]. ... I felt they were doing a pretty good job. All trying to work out what is the best thing that farmers can integrate practically. Want them to see it as positive thing. [The ICM staff] did a good job.

Industry Representative (07/08)

Those [farmers] that have had visits – [they were] happy with how things went and happy that Environment Waikato pointed out things that they needed to address. Haven't spoken to any in that category – that haven't participated – but maybe some have something to hide or have had a bad experience with Environment Waikato in the past.

Industry Representative (07/08)

Field days

Two representatives had attended field days. Their comments about the field days were that they were well-organised and worthwhile. One representative had been to a day that was well-attended, and the other to one that was less well-attended. The comment was made that the farmers that do attend tend to be the “enthusiasts” (that is those that are already interested).

Field days are well-organised. Well-attended. Farmers [get] good feedback on what stage things are up to. Have focused in-depth on the farm it's on. Always interesting for the neighbours.

Industry Representative (07/08)

Those are usually well worthwhile – the problem is that if you get 50 people, then 40 are probably reps and only 10 are farmers. Farmers who go are generally the enthusiasts anyway.

Industry Representative (07/08)

Farm plans

Representatives who had seen farm plans were impressed with the quality of the plans and their thoroughness. One representative suggested that the farm plan include a summary for quick reference. The other commented that the process (that is an individualised approach) and having the “right” people (that is who could engage farmers) were benefits as they came across as more co-operative, than “draconian”.

They're extremely thorough. I'm hopeful that it's of use to the farmer as much as Environment Waikato. Maybe they could do a more concise version for the farmers. Perhaps focus on the summary and making sure they can read that in a couple of minutes. Need something that is farmer-friendly and gives them a few comments they can refer to.

Industry Representative (07/08)

[The Farm Plan] is good. I had done the nutrient budget. So there's some good co-operation amongst the agencies involved. When it can be done on a one to one basis it doesn't come across as draconian and that is the concern - that farmers think it is some high bureaucrat imposing these ideas. It's important to have the right sort of people doing it and I think [Environment Waikato staff member] does a good job. It's more about psychology than nutrient management!

Industry Representative (07/08)

Summary of findings from industry representatives

The industry representatives were positive about the ICM project. They considered that it gave Environment Waikato a positive profile and provided important information to farmers. The skills of the staff in being able to engage farmers were a contributing factor to the success of the project.

9 Findings from the facilitated meetings

As part of the evaluation process, two meetings were held with staff over the course of the project, one in October 2007 and one in September 2008. These were facilitated by the evaluator, who also took notes, and were a way for staff to document the issues that they were coming across in the project, reflect on the project, discuss solutions and learnings, and determine, where relevant, possible solutions and innovations to improve the project. Key findings from the meetings are presented below.

Time

Time was a recurring theme in both meetings. Many aspects of the project take more time than was originally estimated. However, this is more a reflection of the original estimates being unrealistic⁵, than the project being inefficient. In addition, the project has resulted in other activities and tasks (for example, fielding phone calls from farmers, managing internal processes) that also take time. Key points related to time were the:

- amount of time required for co-ordination has resulted in the project manager spending less time on-farm, and more time co-ordinating the project
- Farm Plans take around 40-60 hours per plan due, primarily, to the amount of detail and technical work in the Plans, with the initial farm visit taking about 2-3 hours. By comparison Farm Plans undertaken around the Rotorua lakes by Environment Bay of Plenty are taking about 40 hours, but these do not include the whole farm system approach that Environment Waikato includes, and fully auditable plans for Nitrogen Discharge Allowances (NDA) in the Lake Taupo catchment take around 100 hours
- time it takes to build relationships with farmers
- time it can take to gain trust that Environment Waikato staffs' recommendations are useful and in some cases this requires additional visits or provision of more information.

There was also a recognition that 'good things take time' – that the slower pace actually had positive spin-offs, particularly in terms of relationship building with farmers.

⁵ At the beginning of the project there was an intention to have visited all the farms in the catchment within the two years. However once the project started it became clear that this goal was unrealistic.

Building relationships

Building relationships with farmers was noted as being of key importance to encourage change. The longer timeframes for completing Farm Plans have contributed to the relationship-building as staff spend time with farmers on-farm and have ongoing communication over time, via phone and email. The on-farm visits are invaluable as they enable staff to have good-quality, face to face discussions with farmers, and to build positive relationships.

As a result of the project, relationships have also been built with other partners (for example Dairy NZ, fertiliser representatives), which adds to the numbers of people working with farmers who are aware of what the ICM project and Environment Waikato are hoping to achieve in the catchments.

Another unexpected 'spin off' of the project is that staff are now getting phone calls from farmers that they have been working with. These calls might be, for example, to ask for information or to report a concern about an environmental issue. While this has added to staff workload – answering calls and following up on requests - it is an indication that farmers are viewing the ICM staff and Environment Waikato as a trusted source of information. The point was raised in the meeting that it would be good practice to log these calls in order to track numbers of calls and types of information requested and there are plans to do this.

Staff are also getting asked to do plans for farms outside of the catchment (usually owned by the same farmer they have just done a plan for), which they are turning down as it is outside the project's scope. This indicates the extent to which farmers are viewing the process as worthwhile and useful.

Knowledge of the catchment

As a result of working directly with farmers and others in the catchment, staff noted that they had developed a greater knowledge of the local community – the 'who's who', the social networks, the key players. This gave them a greater insight into the local dynamics, and a greater understanding of some of the issues that were happening in the area.

On-farm changes

Staff were surprised and encouraged by the magnitude of change that some farmers were willing to make. For example, some were planning significant overhauls of their farms and practices. Staff noted that these farmers were more likely to be those interested in innovative practice. They also noted that these farmers possibly had greater financial capacity, (that is they could afford to make larger changes).

Compliance

Compliance with Environment Waikato rules came up at both meetings and was also something that was highlighted in the initial interviews with farmers. ICM project staff are working to build relationships with farmers in order to encourage change and prevent practices that are damaging to the environment. It is important therefore, to work out processes for staff to manage issues of non-compliance on-farm in such a way that relationships can be maintained. One development that has occurred is that the ICM project now has an internal agreement with the Resource Use Group (RUG) which outlines the expectations for ICM staff when faced with non-compliance and how it is to be managed.

Meshing compliance with ICM remains an on-going balancing act and is an area of risk for the project and Environment Waikato, as a badly-handled compliance situation could undo much of the good relationship building that has gone on so far. Conversely, this is also an area of opportunity for the project as a well –handled compliance situation can improve relationships and encourage a positive view of Environment Waikato.

Internal processes

The ICM project has also highlighted a need to have more integration and co-ordination within Environment Waikato. This is so that the farmers in the catchment are getting a united, co-ordinated response, and that each group is aware of who is doing what and where within the catchments. The agreement between RUG and ICM goes some way towards integrating, but a closer relationship and understanding between the two groups would be beneficial.

The processes established as part of the ICM project include:

- design and implementation of Farm Plan templates
- production of GIS farm maps showing effluent areas, nutrient hotspots and other physical features to facilitate spatial discussion with the landholder
- an Excel database to track customer enquiries about the project, including entering those farmers who have indicated interest but are outside the spatial scope of the pilot project
- training of ICM staff in advance nutrient management.

Feedback from the earlier interviews was fed into the design of Farm Plan templates, in order to simplify them for the recipient and to streamline internal process.

A report entitled, Improving Nutrient Efficiency Through Integrated Catchment management in Little Waipa and Waipapa, Reporting Summary for the Upper Waikato Project was commissioned to undertake nutrient management analysis and to integrate this with agronomics and farm economics based on data from some of the ICM participating farms. (Longhurst and Smeaton, 2008).

Summary of findings from the facilitated meetings

The facilitated meetings with staff were a way to reflect on the project and discuss ideas and solutions to issues. A key point that was identified at the meetings was that the project has taken more time than was initially anticipated, however this has resulted in stronger and more positive relationships with farmers, and a more in-depth understanding of the catchment and the dynamics of the communities. As a result of the project staff have also developed stronger relationships with other key partners in the industry, thus increasing the amount of people working with farmers who are aware of what the ICM project and Environment Waikato are hoping to achieve in the catchments. Developing appropriate ways of handling compliance issues and the integration of internal processes are areas that the project staff have recognised as requiring attention, and which they have addressed, and continue to address, in a variety of innovative ways.

10 Concluding comments

The ICM project involves a high level of commitment by staff working with farmers on-farm, continuing to communicate regularly via phone and email, and working to provide in-depth and detailed Farm Plans for each farmer to facilitate change on farm and build relationships. The evaluation found that farmers appreciate that Environment Waikato is working *with* them, that the project focuses on their farm as an individual operation, and that the Farm Plans are detailed and accurate about their farm.

Many of the farmers involved with the ICM project are making changes to their agricultural practices, and in some cases, this has involved a significant level of financial commitment. Findings show that they are most likely to undertake a suggested action if they perceive it will not take much time to implement, is not costly, and is either cost effective or will not negatively affect production. Farmers were unlikely to make a recommended change if they considered that they had already made progress on best practice; for example, with their fertiliser use, which meant they were unlikely to take on a recommendation to further limit nitrogen. Other factors affecting uptake include the topography of the farm (for example hilly country unsuited

to travelling irrigators) and financial constraints (for example unable to afford to build a feed pad). Some farmers were also not convinced that the 'science' was accurate and this perception was a hindrance to change.

These findings are consistent with other research into the adoption of innovations within the farming sector which shows adoption of practices or technologies is affected by farm context - the mix of biophysical factors (for example topography, soil type, rainfall) and socio-economic factors (for example availability of labour or time, financial resources, the current layout of the property) as well as the recognition that there is a need (or problem) - and the belief that the solution being proposed is the best one (Kaine and Johnson, 2004).

One of the key strengths of the project is the one on one, on-farm visits which enable staff to have good quality, face to face discussions with farmers, and to build positive relationships. As a result the ICM project, the staff and Environment Waikato as an organisation are viewed positively both by the farmers in the catchments who are participating in the project, and also by industry representatives. Staff have also developed stronger relationships with other key partners in the farming sector, such as DairyNZ and fertiliser representatives, thus increasing the amount of people working with farmers who are aware of what Environment Waikato is hoping to achieve in the catchments.

The project has also resulted in innovative and positive changes to internal processes in Environment Waikato. For example, commissioning the evaluation early on and acting on recommendations throughout the project, and the need to develop ways to handle any compliance issues without damaging the good relationships being built with farmers. This led to staff clarifying their roles both internally and with farmers and an agreement between the Resource Use Group and ICM for managing compliance within the catchments.

An unexpected positive spin off of the project is that farmers are phoning staff about issues other than ICM, indicating that farmers are viewing the ICM staff and Environment Waikato as a trusted source of information. This is likely to positively impact on rates of adoption of various best practices and rates of compliance with Environment Waikato rules as the farmers are likely to seek out staff, whom they have got to know and trust, when they are keen to make changes and / or when an issue arises on-farm that may impact their compliance.

Overall, the findings indicate that by working one on one with farmers in the Little Waipa and Waipapa catchments the ICM project is increasing the rate of adoption of new practices, particularly those that fit with their farm system, are not costly, and are either cost effective or will not negatively affect production. In addition, compliance with Environment Waikato rules is being met by ICM staff working with farmers to identify issues, highlighting the need for change, and providing advice and support for making the required changes. It has also strengthened relationships with external partners, highlighted the need for internal integration, and resulted in farmers in the catchments developing a positive view of Environment Waikato.

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