Equity Investment Options for Community Irrigation Projects

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Preface

This Paper is one of a series of jointly funded reports commissioned to investigate impediments and opportunities for the development of large-scale water enhancement projects in New Zealand, with a primary focus of providing water for community irrigation schemes. Other reports cover the areas of: international models and experiences, the role of central government, the role of local government, and economic and social assessment parameters. An overview and commentary document summarises the key issues raised in the reports.

The future use of water, in the South Island especially, is a critical issue for regional and central government and private investors. As water is a finite resource that has multiple uses and development requires significant, long-term, investment flows.

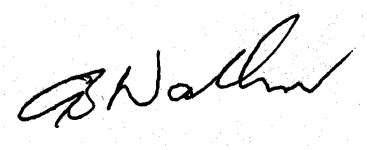
These reports, which consider the use of water for irrigation, arose from feasibility studies by a number of farmer groups (many of whom have contributed to funding of these reports) into large community-wide irrigation projects. The feasibility studies highlighted the need for information to assist co-operative action for the financing, building and running of irrigation schemes.

This Paper reports that the greatest barrier to funding large-scale water enhancement development is the ability to access the finance needed for the feasibility, resource consent and construction phases of irrigation scheme development. The risks of financial loss are high during these phases.

The researcher identifies a range of feasible funding options and key risks for potential investors. Funding structures for these developments and possible risk management strategies are suggested. The author concludes that seed capital funding for the feasibility and resource consent phases of the development is needed and providers should expect to recover the investment through either debt or equity arrangements. Funding options for these phases include government and parties with interest in the benefits. The design and construction phases would be best funded through project finance arrangements that would be secured through long term customer contracts.

The selection of the corporate structure for the project will largely be determined by the requirements of the prospective debt and equity investors.

I would like to acknowledge the experts who wrote these reports, the reviewers who made their contribution, and the many people in the farming community and local government who have made their views known. This report reflects their views and will be a useful contribution to government policy analysis.



Alan Walker
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MAFPolicy

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Hawkes Bay Regional Council
Marlborough District Council
Masterton Business Enterprise Board
Tasman District Council
Waimate District Council
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* The Agricultural and Marketing Research and Development Trust (AGMARDT), earns income from funds invested from a share of the monies arising from the winding up of the Phosphate Commission in 1987. This income is used for promoting and encouraging excellence in New Zealand's land-based industries. Grants are made for farmer projects involving grass-roots problem solving and opportunity development, industry support, conference sponsorship, doctoral scholarships and postdoctoral fellowships. Farmer groups are encouraged to seek details on AGMARDT's applications process by accessing the website on www.agmardt.org.nz or contacting the Secretary Manager, P.O. Box 399, Shortland St, Auckland, Tel. (09) 373 3370, Fax (09) 373 3488.

Contents

1. Executive Summary

1.1 INTRODUCTION

The objective of this study is to identify the range of feasible funding options and likely fund providers available for financing large-scale water enhancement projects, determine which is the most appropriate funding structure for these developments, identify the key risks for potential funding providers and possible risk management strategies to assist in reducing the impact of these risks.

1.2 FUNDING WATER ENHANCEMENT SCHEMES

The greatest barrier to funding large-scale water enhancement development is accessing finance (under reasonable terms) for the feasibility and construction phases of the project. During these phases the risk of financial loss is significant for potential investors and financiers.

The common risk profile of an irrigation scheme is as follows:

An 'established' large-scale water enhancement scheme (i.e. where start-up, development and take-up risks have been overcome) is an attractive investment for those looking for stable longer-term low risk investments. Risk is low and returns are generally fixed given that schemes have high-income certainty (take or pay contracts and a monopoly over supply of water to landowners in the region) and the majority of operating costs are fixed.

1.3 PHASES OF DEVELOPMENT

A water enhancement project progresses through five distinct development phases.

- Phase 1 - Pre-feasibility/feasibility
- Phase 2 - Resource consent
- Phase 3 - Marketing and pre-sale
- Phase 4 - Design and Construction
- Phase 5 - Operating and maintenance

Each phase has a very different risk profile (as outlined in the diagram above) with different funding requirements and is therefore likely to require different funding providers/financiers throughout the development process.

1.4 SEED CAPITAL FUNDING

Seed capital funding relates to the monies required to complete the feasibility and resource consent phases of the development. This funding is considered seed capital as it is essentially funding research and development with a high chance that funds will not be recoverable.

As a rule, the private sector (excluding water users) will not provide seed funding to an irrigation development, as the absolute risk of the investment is too high. The granting of resource consent is a key milestone and essentially a prerequisite for attracting private sector funding. If a scheme is to proceed, this funding must be sourced from other providers i.e. Government (Central and/or local), water users or other related parties.

The providers of seed funding (including Government) to a scheme that ultimately proceeds, should expect to recover this investment including a return commensurate to the level of risk undertaken.

If Government is the provider of seed capital, the level and type of return generated from the investment will be dependant on the agreed funding instrument (debt or equity). Converting the seed capital to debt is the simplest and lowest risk method for Government to recover the investment and return i.e. fixed repayment terms and returns are set upfront. Where Government chose to convert the seed capital to equity the risk increases given that the timing of Government exit or the return on the investment is not fixed. There may also be complications with take or pay requirements fixed to some classes of equity (water rights).

1.5 DESIGN AND CONSTRUCTION FUNDING OPTIONS

Subsequent to accessing seed capital for the completion of feasibility studies and granting of resource consent there are broadly three options available to a scheme when accessing funding for the design and construction phases:

- ***Business Finance***
  High equity requirement (50 percent+), security required, medium lending terms.
- ***Project finance***
  Lower equity requirement (20 percent - 50 percent), security secondary, longer lending terms, secure long-term customer contracts required.
- ***Build Own Operate Transfer (BOOT)***
  No equity requirement, external scheme ownership for a period, secure long-term customer contracts required.

Given the characteristics and key issues faced by water enhancement schemes, project financing is the funding option most closely aligned with scheme needs. However, in-order to qualify for project financing there are stringent income certainty requirements that must be satisfied by the scheme.

The ability to secure ‘project finance’ funding is largely dependant upon the investors’ assessment of the schemes revenue certainty and credibility. For a water enhancement scheme to be eligible for such funding, the minimum requirements would include:

- securing long-term take-or-pay supply contracts with all customers and/or the availability of a credible external underwriter to guarantee revenue capacity;
- documented proof of the long term affordability of water users in the region to meet the required take or pay commitment; and
- the security over long-term access to water.

The BOOT concept has been used successfully in Australia for funding the development of large-scale infrastructure projects, primarily related to development of core Government infrastructure e.g. hospitals, prisons and roads. Application of this model to the New Zealand environment, and more specifically to irrigation - a non-core Government service - will require further investigation before it can be recommend as a viable source of funding.

1.6 DEBT FUNDING PROVIDERS

There are a number of potential providers of debt funding for water enhancement schemes. These include standard bank debt, institutional debt (e.g. superannuation funds, insurance companies, other managed funds), public debt (e.g. bonds and debentures issued to the public market), Government debt and off-shore/foreign debt.

The debt providers that most appropriately match the requirements of water enhancement schemes are banks, Government (Central or local) and institutional investors.

Arguments relating to the justification of Government funding are outlined in a study on the role of Central Government and the role of Local Government.

Foreign and public debt investors generally require strong independent credit ratings and a recognisable company or brand name before they are prepared to commit funds. Water enhancement schemes are not likely to meet either of these criteria, and therefore would find it difficult to raise funds in these markets.

1.7 EQUITY FUNDING PROVIDERS

Possible equity funding providers fall into two categories, private equity and Government equity. Private equity encompasses water uses (e.g. farmers, electricity generation companies and other industry users) and other non-participating private investors.

The equity providers that most closely match the requirements of a water enhancement scheme are water users and Government (Central or local). This is primarily because water users and, to a certain degree, Government are able to generate returns on their investment outside of the financial performance of the scheme e.g. capital growth in land prices, more efficient use of natural resources and provision of social and community benefit.

Schemes may access some non-participating private equity investment but as these investors require a return generated primarily from scheme operating profits, it is unlikely that the necessary return will be available if these investors provide a significant portion of funding.

1.8 OTHER FUNDING SUPPORT

Other methods of support are critical to ensuring a scheme is able to access the most efficient funding structure. Provision of guarantees can assist a scheme to overcome the issue of inadequate security while underwriting revenue take-up can allow a scheme to better manage the water user take-up issue.

Guarantees from a credible source will be required for security over debt provided under a business financing option. The party with the greatest credibility and capacity to provide this guarantee is Government. These guarantees should be able to be limited to an initial scheme operating period of three to five years.

Where it is not viable for a scheme to stage the development in line with customer demand, there may be a role for a third party underwriter e.g. Government (Central or local) to guarantee the revenue capacity of a scheme where water user commitment is less than the

scheme requires. There are significant risks in providing this underwriting role. It is critical that a detail risk assessment is completed and management strategies developed before this role is considered.

1.9 CORPORATE STRUCTURE

The corporate structure selected will impact on a schemes' ability to access debt and equity funding from various parties. The structure selected will be largely determined by the requirements of prospective investors.

Equity Investors

Where a scheme is expecting to receive equity from a combination of water users, non participating private investors and Government, the scheme must structure share capital in-order to meet the specific needs of each investor.

- A water users primary requirement is access to water rights from the network. The holder of these rights will have a contracted financial take or pay commitment to service.
- Non-participating private investors do not want access to water, and certainly do not want to be committed to a take or pay liability.
- Government may want to access some water e.g. for domestic supply purposes, but is not proportionate to the level of equity investment made.

A scheme can manage these investor preferences by issuing different classes of shares, e.g. Class A has water rights attached and Class B does not. The number of share classes, the proportion of shares in each class and differential in pricing between classes will be specific to each individual schemes and investors.

Debt Financiers

Different legal structures can provide different levels of risk for financiers. Under project financing and BOOT funding, long-term certainty of revenue is the critical element that debt providers will focus on. Therefore the legal structure of the scheme must support long-term certainty of revenue. For example, Co-operative companies may not provide the level of long-term commitment required given that Co-operative Company legislation allows shareholders, under certain conditions, to force the Company to repurchase shares.

1.10 BOOT MODEL

The Build Own Operate Transfer (BOOT) funding model essentially has water users buying water under a supply agreement (typically for 25 years) from a private party who has funded, built, owns and operates the scheme for a defined period of time. At the end of the contracted period the scheme is transferred to an agreed party.

There are two key advantages to funding a scheme using a BOOT model. Firstly, there is no upfront financial commitment required from water users, the scheme is funded 100 percent by the BOOT company. Secondly, water users are able to transfer the majority of risk relating to construction and operating and maintenance costs to the BOOT operating company for the term of the contract. The water users pay a fixed price for a service regardless of the operating and maintenance costs incurred by the BOOT operator.

The applicability of private BOOT funding to large-scale water enhancement schemes in New Zealand requires further investigation. Some of the key unanswered questions include:

- Is BOOT is an affordable means of funding a water enhancement scheme? What will be the cost of water at the farm gate?

- Do BOOT operators consider water users to be sufficiently credit worthy to undertake a BOOT development? Is the risk too high? Will additional security/guarantees be required?
- Does the RMA provide secure enough access to water?
- Is the New Zealand legislative and control environment appropriate and attractive for BOOT operators?
- Can all parties be appropriately protected (water users, BOOT operators, Government, environmentalist) if one of the parties is not able to meet commitments into the future?

BOOT operators have shown interest in the New Zealand water enhancement market.

1.11 LEGISLATIVE CONSTRAINTS

There are some legislative constraints impacting private investment in water enhancement schemes in New Zealand. The key Acts include:

Resource Management Act (RMA)

Under the Act there is a general lack of security over long-term access to water. While the Act does not allow cancellation of a granted resource consent, it does provide for additional conditions to be imposed throughout the consent period that may make it prohibitive to access water under the consent. Certainty of water supply is a key issue for funding providers.

Comments have also been made suggesting that the process of applying for resource consent is prohibitive for private investment. The process is time consuming, cumbersome and heavily weighted towards the concerns of individual members of the public.

Electricity Industry Reform Act

This Act prevents significant investment from electricity lines companies into water enhancement schemes with hydro generation capability.

Tax Depreciation Rates

New Zealand tax depreciation rates for water enhancement development are not as favourable for investors as they are in other similar countries.

2. Objective and Scope

The objective of this study is to identify a feasible range of options for the financing and development of large scale water enhancement projects and to analyse the most promising in terms of business structures, potential investors, identification of risks to participants, the investment, and risk management strategies.

The terms of reference for the work are:

- Take account of the findings of the review of international experiences and the recent models successfully used in NZ to implement the Opuha and Waimakariri-Ashley water enhancement projects.
- In this regard, and within the existing legislative and regulatory environment, the study will investigate the following:
  - Partnership options for funding water enhancement developments.
  - Role of trust structures to cater for future share allocations.
  - Investment by third parties.
  - Role of BOOT development models.

- Identify constraints under the existing legislative and regulatory environment for implementation of promising equity sharing models.
- Identify the risks associated with each equity option for each class of investor, and develop possible risk minimisation strategies.
- Recommend a range of equity sharing models that may be useful for the developments under consideration and any requirements that need to be further considered.

3. Investment in Large-scale Water Developments

There has been significant activity surrounding irrigation from the private sector in recent years. This has been triggered by the exit of government from ownership in major community assets, the removal of subsidies and hands-on government services, improving product returns, greater skills and technology, and the intensification of land use that is possible with water. The majority of this activity initially occurred on a very small scale with development of single farm bores and small run of river pumping schemes. Two community based schemes of Opuha and the Waimakariri and grants for investigations into water resource and irrigation feasibility studies has resulted in the current activity. Funds have been provided through a combination of public (Central and local Government) and private (primarily land owners, some related industry and some unrelated private investment) sector investment.

Irrigation provides clear tangible benefits for landowners, demonstrated by the level of activity currently surrounding large-scale water enhancement developments throughout the country. However, in most cases landowners do not have the ability to fund large-scale irrigation developments without significant financial assistance from other parties. The success of these schemes is therefore dependant on their ability to attract funding from other private and public sector investors.

3.1 PRIVATE SECTOR (EXCLUDING WATER USERS)

Private sector investment (excluding landowners) is driven by two key factors – "risk" and "return". If the returns are adequate to match the level of investment risk (within reason) then there is likely to be interest from the private sector.

Large-scale water enhancement developments generally find it difficult to access private sector funding for the feasibility and construction phases, as investment risk is simply too high.

However, once the start-up risks have been overcome these schemes have specific characteristics that make them an attractive low risk option for private investors. These characteristics include:

- Schemes are likely to generate long-term (20 – 30+ years) stable investment returns.
- There is high certainty over future revenue streams given:
  - a monopoly over high certainty supply of water to the region (no by-pass risk);
  - strong customer commitment given the level of on-farm investment that has to be made to utilise the water effectively;
  - customers are generally committed to regular payments through long-term take-or-pay supply contracts;
  - growth in global populations and increasing world food requirements.

- There is high certainty over future expenditure streams given that the majority of the schemes operating costs are fixed (assuming funding costs can be fixed over the life of the project).
- There is a track record of recent success with similar investments i.e. Waimakariri and Opuha schemes.
- There is no concentration of credit risk given a wide customer base of relatively small individual users.
- There is likely to be strong community commitment to assist and facilitate with the scheme development given the regional economic benefits.

3.2 PUBLIC SECTOR

The benefits and justification for Public sector investment in water enhancement developments have been reviewed in detail within the studies on the Roles of Central and local Government.

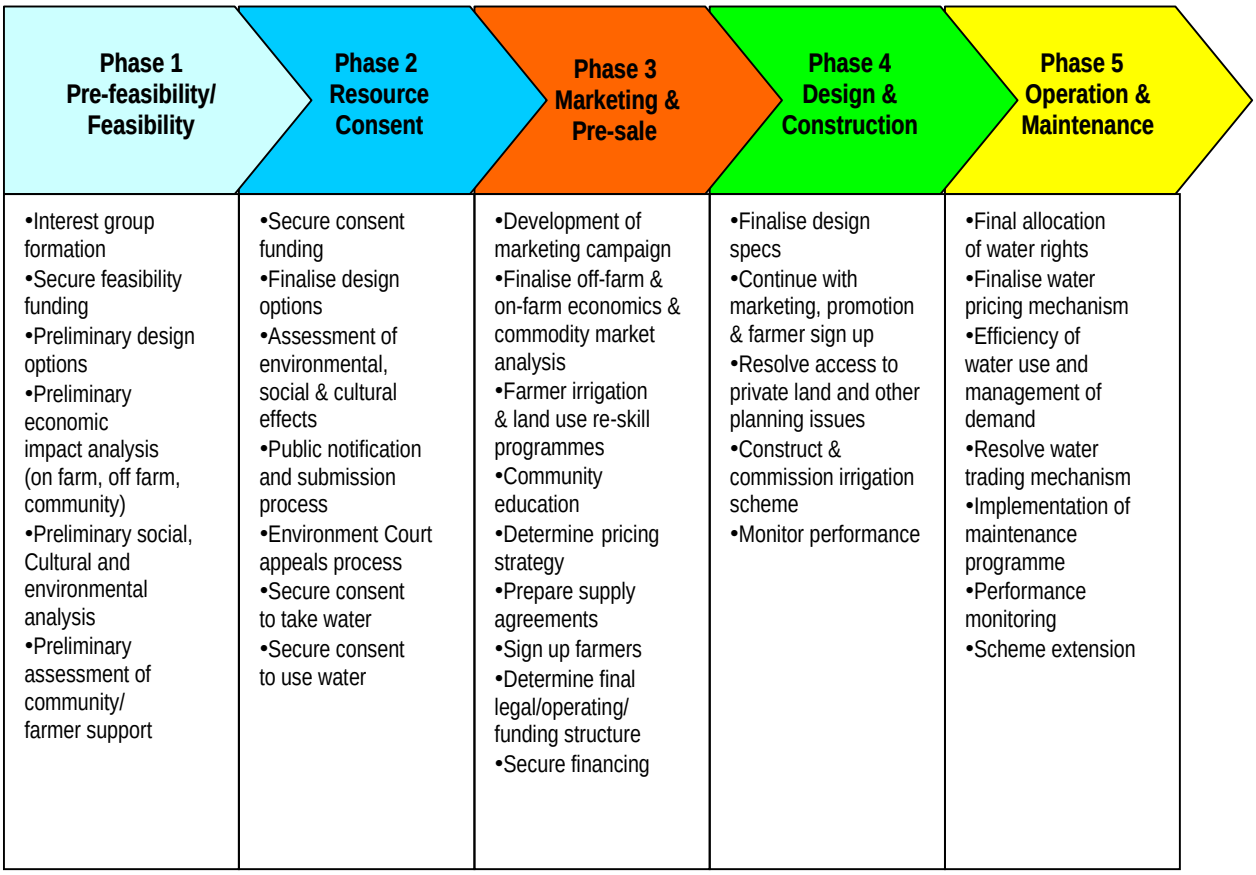
The key public sector benefits provided by a water enhancement development relate to a more efficient use of primary resources generating economic, social and community activity for the region and the country. Previous studies have shown water enhancement projects to assist with the revitalisation of rural communities through the creation of new employment opportunities, increases in the productive population, and increases in disposable earnings from higher yielding land use.

The are also significant financial benefits for the public sector in the form of increases in rateable property values, personal tax takes and export earnings.

Further analysis is given in the studies on the role of central and local government.

4. Phases of Water Enhancement Development

A typical water enhancement development will follow 5 key phases:



Each phase has a different risk profile and funding requirement. It is therefore unlikely that one provider will be adequate to fund the scheme from conception to completion.

Risk profile and funding requirements for each phase are as follows:

Phase	Description	Investment Risk	Funding Requirement
1	Pre-feasibility/feasibility	High	Low
2	Resource consent	High	Low
3	Marketing and pre-sale	High	Low
4	Design and construct	Medium	High
5	Maintenance and operation	Low	Low

5. Funding Phases 1 & 2 - Seed Capital

A scheme will require a level of 'seed capital' to fund the preliminary feasibility study and make an application for resource consent (phases 1 and 2 above). This funding is considered seed capital as it is essentially funding the research and development stage of the project with a high chance that the funds will not be recoverable.

Feasibility

This is high-risk research expenditure with no certainty of recovering costs incurred if the scheme is in fact not feasible for the area.

Resource Consent

Funding an application for resource consent to take and use water is also a high-risk investment. There is little certainty that consent will be granted until the process has been completed. If the application is declined all costs incurred to that point are irrecoverable.

5.1 PROVIDERS OF SEED CAPITAL

5.1.1 Private Sector (excluding water users)

Based on discussions with private sector investors (both debt and equity providers) the absolute risk of financial loss is simply too high for them to consider and therefore there is simply no interest in providing seed capital to these schemes. There are many examples of proposed schemes which have incurred significant expenditure but subsequently have not proceeded for any number of reasons e.g. the scheme is too expensive, lack of farmer commitment, can't raise required funds, issues with resource consent, returns are too low etc.

5.1.2 Water Users

Water users stand to benefit most from the introduction of a water enhancement development and therefore should be a source of at least a portion of this funding. In addition, a financial commitment from water users at this point is an important signal to the funding market that the users are committed to making the scheme a success.

5.1.3 Government (Local and Central)

Where there is insufficient funding available from the private sector, financial support must come from Government if the preliminary investigations are to proceed. In reality Government is only likely to fund a portion of the seed capital requiring a contribution from land owners given that land owner commitment to the scheme, even at this early stage, is a key indicator of the future success of the development.

Providing seed funding to a proposed irrigation scheme is a high-risk investment, and Government must be prepared to provide funds on this basis. However, there is no need for Government to provide funds without an expectation of a repayment and return if the scheme does proceed, particularly given the risk of the investment. It is therefore important for Government to structure the provision of seed funding with repayment and return in mind.

There are two options available for Government when contributing seed capital:

- Provide the funding by way of **debt** – Returns are fixed and funds repaid under agreed terms if the scheme proceeds.

- Provide the funding by way of **equity** – Government owns shares in the scheme that have some value on a tradable market if the scheme proceeds.

Debt

If the scheme proceeds there are several advantages for Government in providing seed funding by way of debt:

- Debt carries a lower risk for Government than equity given that the return on the funds is fixed regardless of the performance of the scheme;
- Debt gives Government a clear exit from the scheme i.e. Debt is to be repaid from proceeds raised from the construction phase. (These were the repayment terms used by the Waimakariri District Council when seed funding was provided to their scheme).

Converting seed funding to debt may have some disadvantages for the scheme.

- It may restrict the schemes ability to borrow funds from the private sector for later development (i.e. debt/equity ratios will be impacted),
- The scheme may have to service the debt during the start-up phase when cash flow is limited.

Equity

Where seed funding is converted to equity Government will carry more risk than it would converting the seed funding to debt, given that returns are dependant upon the success of the scheme and the amount that the market is prepared to pay for shares.

The potential capital gains (and therefore risk) from equity trading are dependent on the class of shares accepted by Government. Historically, shares with water rights attached have sold for significant capital gains (Opuha and Waimakariri schemes), however, these shares attract take or pay commitments that may be difficult for Government to recover if it is not the ultimate water user through the holding period.

Equity will give Government the ability to share in the success of a scheme and potentially generate super normal profits from the sale of this equity.

Government holding equity will not impact on the scheme's ability to raise funds from the private sector, and depending on the terms of the arrangement, allows the scheme flexibility to pay returns when cash flow permits.

Government Support

The arguments for and against Government support are addressed in study 3 and 4. For the schemes currently under investigation, both Central and local government have provided either all or a portion of this seed funding for feasibility studies with no requirement for repayment or conversion to debt or equity.

6. Funding Options for Phases 3 - 5

The funding structure options available for the development of water enhancement projects fall into three broad categories:

- business finance;
- project finance;
- Build, Own, Operate, Transfer (BOOT).

The applicability of each funding structure differs depending on individual scheme objectives and circumstances. However, each funding structure has different requirements and in many cases a scheme will not meet the criteria for all of these structures.

Each of the above funding structures require a combination of the following funding mechanisms:

- debt;
- equity;
- hybrid equity;
- other financial support:
  - financial guarantees;
  - revenue underwriting.

6.1 BUSINESS FINANCE

Business finance refers to traditional commercial lending, where an entity borrows funds for a project based on projected cash flows, backed by strong security giving the lender comfort that the debt will be recovered in the event that the cash flow projections are not met.

This was the structure applied by the BNZ to both the Waimakariri and the Opuha irrigation schemes during the 1990s.

Debt/Equity

Providers of debt funding to water-enhancement schemes under this structure are likely to require at least 50 percent equity for the project. This has been demonstrated in the funding arrangements for the Waimakariri scheme (55 percent equity) and the Opuha scheme (initially 45 percent equity, then raised to 66 percent equity).

Security Requirements/Financial Guarantees

In addition to adequate cash flow, the key to gaining business finance is security. This is one of the principle funding constraints for water enhancement developments, as there is limited security in the underlying value of the assets. Financiers are comfortable accepting high debt levels (60 percent – 80 percent) for house loans, commercial loans for plant, buildings and similar assets because these items have an easily realisable market value. It is difficult to recover the cost of dam and ditch construction in the same way.

In most cases security needs to be provided from another credible source. The likely contenders for providing this security are water users, by way of a charge over their land and physical assets (if they have the equity available), or in the form of a Government guarantee.

There are serious issues for the scheme and the financier to consider if security is to be provided by way of mortgage over the water users property. The primary issue is that it is administratively difficult and significantly complicates the tradability of water. Essentially

each sale/transfer of a water right would need to be registered and approved by the lender. This would include a financial assessment of each buyer to ensure that the lenders security has not diminished through the transfer. The other key issue is whether the water users have the required level of equity in the farm to provide the level of security given the extent of the on and off farm works to be completed.

The logical party to provide security for an irrigation project is Government (local or Central) by way of guaranteeing the repayment of debt, as was the case with both the Waimakariri and Opuha irrigation schemes.

Term of Finance

In the current commercial environment, the term of a business finance loan to a water enhancement development is not likely to extend beyond 10 – 15 years. Even with strong security (i.e. Government guarantees) 15 years is likely to be the maximum lending term.

Applicability of Business Finance to Water Enhancement Schemes

This is the traditional financing structure for a water enhancement scheme and has been applied to all new developments since deregulation in the mid-1980s.

This structure does have the following limitations:

- Access to large amounts of upfront equity (50 percent +) is a constraint for these schemes, particularly given the additional on-farm capital that is also required from water users. Recent studies completed for a South Island irrigation scheme have shown that on farm costs are almost double that of off-farm costs. Many water users simply do not have the ability to fund on and/or off-farm development. A list of possible equity providers is discussed in detail below.

- The term of the debt is significantly shorter than the life of the scheme. This may impact on the affordability of the scheme over the debt repayment period. There may be opportunities to spread the debt further by refinancing after the project has an operational track record. This does open the scheme up to the risk of interest rate increases either from general market conditions or if scheme performance has not meet expectations and the lender perceives the risk to be higher.

- A scheme is likely to need access to secondary security, either from water users or more likely from Government (local or Central) guarantees particularly over the initial 3 to 5 years of operation when take-up risk is high.

The arguments for and against provision of guarantees from Government are discussed further in Study 3 – Role of Central Government and study 4 – Role of Local Government.

Although there are limitations under this funding structure, schemes have been successfully funded using this method. For water enhancement schemes that do not meet the criteria for project financing this may-be the only structure available.

6.2 PROJECT FINANCE

Project finance refers to a structure that relies primarily on the strength of the project's cash flow for debt repayments with the underlying asset value held as secondary security or collateral.

Project finance is not a new concept in business, but has not been used to fund large-scale water enhancement schemes in the past.

For a water enhancement scheme to be eligible for project finance the following criteria must be met:

- very high certainty of revenue (i.e. long-term take-or-pay supply agreements with all water users); and
- very high quality of revenue (i.e. proof that customers will be able to meet contract payments over a long term period). Where the quality of revenue is an issue, a scheme may require an underwriter to guarantee revenue capacity to be funded under this structure.

This underwriting role, if required, is not likely to be provided by water users as it is an assessment of the water users inability to meet the commitments that necessitates the role of an underwriter.

Debt/Equity

The equity requirements are significantly lower under a project finance structure. Equity requirements may be as low as 20 percent for a water enhancement development with strong water user contracts.

Security Requirements/Revenue Underwriting

The strength of project cash flows (under pinned by water user contracts) provides the security for the debt. Security requirements in addition to this are secondary. If the lender does not consider the contract holders to be credit worthy then additional guarantees may be required to underwrite revenue capacity.

Term of Finance

Under this structure, the term of the loan is dependent on the term of the customer supply agreements. The loan term is likely to be extendable to within two to three years of the supply agreement term i.e. if a supply agreement is for 25 years, it is likely that the loan term could be extended for up to 22 - 23 years.

Applicability to Water Enhancement

Large-scale water enhancement schemes are well suited to project financing criteria. There are clear advantages for schemes given the lower up-front equity contributions and extended repayment terms afforded under this structure.

A scheme seeking funding under this structure will need to assess the impact that the long-term take-or-pay supply agreements have on the ability to allow water trading.
Project financing is the preferred funding structure for irrigation development.

6.3 BOOT FUNDING MODEL

The BOOT funding option is discussed later in the study.

7. Debt Funding Options for Business or Project Finance

Business finance and project finance structures require a combination of debt and equity funding. Outlined below are the various sources of debt funding available under these structures.

7.1 PRIVATE DEBT

Justification for private sector investment has been outlined in section 2 (above).

While there are a variety of options for raising private debt in the marketplace, the nature of the irrigation project will result in the available options being somewhat limited. Possible providers of debt have been outlined below.

7.1.1 Bank Debt

Bank debt will constitute "senior debt", meaning it is fully secured lending with a priority for repayment and as a result will carry the lowest cost. As the amount and term of bank financing increase, so will the cost. This is a result of an increased risk profile of the lender through uncertainty created around debt servicing and ultimate repayment.

The level of debt (as a percentage of the project value), the permissible term, and the cost of the debt will vary among the banks. We recommend several banks be invited to offer terms for lending into the project to ensure the best deal possible is achieved.

7.1.2 Institutional Debt

There are a number of institutional fund managers that may have an interest in investing in long-term infrastructure assets such as water enhancement. The desire of these companies will be to match their required superannuation annuity cash flows with a long-term investment that can provide a relatively certain level of cash flows.

It is the long-term nature of water enhancement schemes that will attract institutional investment. This form of debt has not been accessed by water enhancement schemes in New Zealand in the past and therefore there would need to be an intense education and marketing process to attract this investment. As a precedent, Australian superannuation schemes and insurance companies have invested significant levels of funds into long-term infrastructure projects and consider water enhancement developments to be a very good investment provided that the start-up risks have been overcome.

Essentially the private infrastructure (particularly irrigation infrastructure) investment market is relatively new to New Zealand and therefore is approached with caution. Large institutional investors (like insurance companies) are restricted as to what they are able to invest in, based on industry segments, geographic locations, recognised credit ratings etc. Given that there is no significant track record for private irrigation investment (outside of water users) this market may take a while to mature in New Zealand.

Institutional investors are likely to take a project finance focus, relying heavily on cash flow certainty rather than strong security. A scheme will therefore need to demonstrate very high reliability of revenue and strict management of scheme costs in-order to interest these investors.

7.1.3 Public Debt

Public debt refers to issues of debt to the general public by way of bonds, capital notes or debentures with a fixed rate of return. Private investors who take up these issues are generally driven by returns, with less of a focus than banks on other terms and conditions, including security.

Given that the market has not yet seen a large-scale irrigation project it is unlikely that this investment will be attractive to the public without certainty about the quality of returns and long-term value of the project. There are a variety of investment options competing for private investors in the market, and the structure and returns would have to be set appropriately to attract this form of financing.

It is not likely that this form of debt would be as applicable to water enhancement schemes.

7.1.4 Offshore Capital Markets Debt

Offshore debt markets in Europe and the USA can offer issuers a longer term than is generally available in the Australasian markets. The offshore markets are usually US$ denominated with minimum deal size considered to be US$50m for Europe and US$100m is normal in the US.

The Asian debt market is providing attractive borrowing rates, but are not fixing rates for long term lending at present. The inter-bank interest rates in Asia are currently around 0 percent, therefore funds are available to borrow at a 2 percent -3 percent interest rate. However, as these rates are in local Asian currency and not able to be fixed for long periods, access to debt through this market is not applicable for water enhancement schemes in New Zealand.

Providers of finance in these markets will usually look for a recognised company name with a reputation in the market. This will make access to these funds difficult for water enhancement developments.

It is not likely that this form of debt would be as applicable to water enhancement schemes.

7.2 GOVERNMENT (PUBLIC) DEBT

Access to Government debt is clearly positive for irrigation developments. Government provides the corner stone investment role, and is likely to accept lower debt finance rates with more relaxed repayment terms given the non-financial benefits that irrigation brings to the region and country. Government participation brings credibility to an investment and generally strengthens the schemes ability to raise other debt and/or equity funds from the private market.

Government (local and Central) investment criteria and prioritisation in relation to debt funding has been outlined in *Study 3 – Role of Central Government* and *Study 4 – Role of Local Government*.

See 8.2.3 below for an assessment of the effectiveness of Government Debt vs Equity.

8. Equity Funding Options for Business or Project Finance

Under a business or project finance structure equity in some form will be required to launch a water enhancement development. It will be necessary to secure a source of equity financing before any debt providers will consider advancing funds.

Outlined below are the various sources of equity funding available under these structures.

8.1 PRIVATE EQUITY

8.1.1 Water Users

Water users are the direct beneficiaries of the scheme and with a significant on-farm investment at risk, is the group most likely to want to own and control the scheme assets.

One of the key advantages of equity investment by water users is that it demonstrates long-term commitment to the scheme from the customer base. As a result, the scheme is more likely to receive support from other private sector investors and/or Government if required.

However, accessing large volumes of equity from water users is likely to be difficult given that water users may not be able to access the required level of funds and still have funds available to complete on-farm development.

8.1.2 Private Investment

Generally private investors are driven by the investment rate of return. The rate required is derived from the risks associated with the investment.

Typically a return of 10 percent – 15 percent after tax is required for these types of projects.

There are various ways that a private investor can achieve the level of return outlined above from a water enhancement investment. These include:

- Dividend payments made from scheme operating profits.
- Capital growth in the value of shares based on expectations of financial return.
- Capital profit generated from issuing of new shares at a premium based on additional scheme capacity or further scheme development.
- Speculation in the trading or leasing of water rights. This is a higher risk investment and therefore the expected return would need to match this profile.

8.1.3 Equity Structuring for Private Investment

Private investors have different investment requirements and objectives to water-user and therefore a scheme needs to be structured appropriately if it is to be funded using a combination of these investors.

A water user is primarily motivated to invest in a scheme to get access to water rights and to pay the lowest possible charge per unit for water use.

A private investor does not want access to water rights (given the take-or-pay commitment attached) but wants to charge water users at a rate that will provide an adequate return on the funds invested.

In order to meet the objectives of both investors the most effective way is to set up separate classes of shares.

For example:

- Class A shares:
  - no water rights attached;
  - preferenced for dividend payments, or cumulative dividend rights attached.
- Class B shares:
  - water rights attached;
  - take-or-pay commitment attached;
  - subordinated for dividend payments (if any).

8.2 GOVERNMENT (PUBLIC) EQUITY

Government (Central and local) investment criteria and prioritisation in relation to equity investment has been outlined in *Study 3 – Role of Central Government* and S*tudy 4 – Role of Local Government.*

8.2.1 Standard Equity

Government investment requirements are similar to those of the private sector discussed above. A scheme must therefore be structured in a similar way to meet investor return and exit requirements:

- Government equity and rights to take water must be separated in-order to exclude Government from take-or-pay financial commitments. This can be achieved through the issuing of separate share classes.
- There must be an ability to exit the investment, therefore a mechanism for trading shares must be available.

As with debt, Government equity provides credibility to the investment and comfort to other private debt and equity investors as it is seen as a corner stone shareholder for the development.

Government may be prepared to accept higher investment risk with lower financial return expectations given that a portion of the return will be provided through economic and social benefits to the region.

8.2.2 Hybrid Equity

Hybrid Equity is a form of permanent capital with certain characteristics both of debt and equity. Hybrid equity can be viewed as equity for financing purposes, because it ranks behind senior creditors and debt, but does not generally share in the equity upside, e.g. share price appreciation, as a fixed rate of return is paid.

Possible forms of hybrid equity applicable to irrigation developments include:

- Subordinated loans;
- Redeemable preference shares;
- Convertible notes.

Hybrid equity allows Government to provide equity support to a water enhancement scheme assisting with gearing requirements, but also provides Government with the advantages of lower risk debt funding including a fixed rate of return and a clear exit strategy through repayment of the debt or a take-out of the debt by the private sector.

Hybrid equity allows Government the greatest flexibility to structure the financial support to meet the needs of both the scheme and Government.

8.2.3 Effectiveness of Government Debt Vs Equity

It is difficult to give a generic recommendation as to which is the most effective form of Government investment as this is determined by the specific circumstances of individual schemes.

For example:

- A scheme situated in a region with high water user commitment but limited capacity to provide equity for the scheme would benefit mostly from an equity contribution allowing the scheme to leverage the required level of debt funding.
- A scheme in a region where water user access to equity is high but gaining sufficient commitment is an issue, the scheme would benefit more from Government underwriting revenue during the take-up phase.

This has been demonstrated by the range of support provided by Government when funding infrastructure assets in the past. i.e.

- Debt funding – provided to Opuha and Waimakariri,
- Equity contributions – provided to Opuha,
- Hybrid equity – provided to a wood processing facility in Waimate,
- Revenue underwriting – provided to the WestpacTrust stadium in Christchurch.

In most cases the support provided by Government is based on a detailed negotiation process with the individual scheme.

General Recommendation

Provision of Government equity or hybrid equity in most cases is likely to provide the greatest leverage with the private sector and is therefore the most effective investment tool for the scheme. With a Government equity investment, other private sector investments are protected given that equity will rank behind debt in relation to investment returns and access to assets in the event of a company wind up. Other private investors/financiers are further protected under Companies Act legislation with solvency test requirements to be met prior to any distribution allowed to shareholders.

Equity is however a higher risk investment for Government. Applicability of funding options for Government are outlined in Study 3 – *Role of Central Government* and Study 4 – *Role of Local Government.*

9. Other Financial Support

9.1 FINANCIAL GUARANTEES

In the context of water enhancement schemes, a financial guarantee refers to an undertaking from a financially secure party (typically local government) to meet the scheme debt servicing and repayment commitments in the event that these cannot be met through scheme operating cash flows.

9.1.1 Local Government

Local government provision of financial guarantees is common practice. The majority of these are for small amounts relating to sporting and community clubs. There are precedents for local government providing guarantees to water enhancement developments:

- Debt financiers of the Waimakariri scheme received a guarantee from the Waimakariri District Council for a 5-year term.
- Debt financiers of the Opuha scheme received a financial guarantee from the Timaru District Council for the initial 3 years of operation.

Justification for and risks relating to the provision of local government guarantees has been discussed in the study on the *Role of Local Government*.

From a funding prospective Local government need to consider the following key points in relation to providing financial guarantees.

- In many cases, funding (with appropriate terms) is not likely to be provided without a creditable financial guarantor.
- The key period of risk for a water enhancement scheme is the initial three to five year operating period, where the scheme has to manage water user take-up and wait for on-farm development and conversion. To minimise risk, local government should be able to limit the term of the financial guarantee to a five-year period.
- To manage risk, local government should complete rigorous due diligence on the scheme to confirm the financial viability prior to committing a financial guarantee.
- Local government need to ensure that there is provision for the scheme to pass into public ownership in the event of a call on the guarantee.

9.1.2 Central Government

Although the Public Finance Act 1991 allows for Central Government to provide financial guarantees to private organisations, a study on the *Role of Central Government* has not identified this as an option for Central Government to explore.

9.2 GOVERNMENT (CENTRAL OR LOCAL) UNDERWRITING

The role of Central and local Government in relation to underwriting water rights has been addressed in other studies. The analysis below relates to underwriting as it impacts on funding options.

Revenue Underwriting

If a scheme wishes to access project financing or BOOT funding then certainty of revenue is critical. Given past experience with water enhancement schemes, achieving certainty over revenue is very difficult through the initial operating period.

Where a scheme is having difficulty getting commitment from water users there are three possible scenarios.

- The scheme is not financially robust enough for the range of water users and therefore no funding will be provided and the scheme will not proceed.
- The scheme is financially robust, and can be staged to meet user demand and be extended at a later date to cater for increases in volume. Under this scenario funding is likely to be available for stage one of the project.
- Government (Central or local) agrees to purchase all of the unsold shares in the scheme and hold these for future resale when demand for water increases (underwriting). Under this scenario funding is likely to be available for the entire scheme.

It is important that Government only consider underwriting a scheme after the first two scenarios above have been deemed inappropriate.

Providing underwriting support carries a high risk for the provider and if this is to be a viable option, the following conditions must be addressed:

- Set minimum levels of commitment for water users prior to scheme construction i.e. 70 percent committed.
- Ensure that there is a mechanism and a market available to lease water for recovery of take-or-pay costs.
- Ensure that the demand potential is high given that the scheme caters for significantly less that the total command area.
- Restrictions are to be put in place preventing general water trading until all Government shares have been re-sold.
- Include a sunset clause in the agreement enforcing a repurchase of outstanding water rights (including a financial return) after a defined period of time (i.e. 5 years). This provides an incentive for those in the scheme to market it to new users, or they will be paying the difference.

Cost Underwriting

Water enhancement financiers are less concerned about having scheme costs underwritten given that the majority of these costs are fixed or risks can be effectively managed through allocation to other parties (i.e. construction companies, DBO providers).

There is therefore limited value in a scheme having Government underwriting costs. It is also more difficult for Government to exit the investment if funding has been provided in this manner.

Exit Strategies

Formal exit strategies need to be agreed with funding providers and water users prior to entering into the underwriting agreement so all parties are aware of the risks prior to committing to the development.
The exit strategy should reflect the short-term nature of Governments underwriting offer ensuring exit is available as soon as possible, provided it is commercially prudent.

The viable exit strategies include:

Tradability of shares provides an easy exit route for Government to extract its investment. Provided the scheme is delivering water to the farm gate economically and the demand is sufficient shares may be sold to any of the following parties:

- New or existing water users;

- Other private investors;
- The scheme itself.

Government should expect to achieve a reasonable financial return for the sale of these shares given the level of risk undertaken. There has been clear evidence of share appreciation with both the Waimakariri and the Opuha schemes.

Other exit strategies include:

- Where a scheme is not performing as expected and the market for water shares is not active (unlikely, based on recent experience) Government may have to enforce a sale of shares back to the scheme based on the terms of the underwriting agreement (sunset clause), provided the scheme is able to financially support this transaction.
- Where a scheme does not have the ability to repay an underwriter based on the agreed terms, Government should cease the take-or-pay commitment (this will need to absorbed by the scheme) and consider converting the outstanding balance to a loan with commercial lending terms and exit over a longer period.

10. Build, Own, Operate, Transfer (BOOT)

A BOOT funding model involves a single organisation, or consortium (BOOT provider) designing, building, funding, owning and operating the scheme for a defined period of time and then transferring this ownership across to an agreed party.

Customers enter into long term supply contracts with the BOOT operator and are charged accordingly for the service delivered. The service charge includes capital and operating cost recovery and project profit.

BOOT schemes are becoming an increasingly popular means of financing large-scale infrastructure development such as roads, bridges and hydro dams in Australia and developing countries.

Debt/Equity

A BOOT model is effectively 100 percent debt funding. Water users pay no upfront capital costs but are committed to regular water charges through a long-term take-or-pay supply contract. The capital cost is repaid over the term of the supply contract.

Security Requirements

The key requirement of a BOOT provider is long-term supply contracts with users. Similar to project financing, the certainty of cash flow is the key driver, while security is secondary. BOOT providers must also be confident of the credit worthiness (quality) of the water users over the term of the contract or they will not consider undertaking the project.

Term of Finance

BOOT terms vary between projects but for a water enhancement development the BOOT term is expected to be approximately 25 years.

10.1 ADVANTAGES AND DISADVANTAGES OF BOOT

10.1.1 Advantages

- The majority of construction and long-term operating risk can be transferred onto the BOOT provider.
- BOOT allows the water enhancement development to happen very quickly. The scheme is not constrained through a lack of funding, a lack or expertise or project management capability. Also, there are strong financial incentives for the BOOT operator to complete the construction and get the scheme operational as soon as possible.
- Involving a BOOT operator gives the scheme certainty and makes it more believable for water users. This in turn encourages interest in the scheme from an early stage.
- No upfront cost for water users frees up more capital for on-farm development to occur quickly. This is also positive for the scheme, as users are able to come online faster.
- Using an output based purchasing model, the tender process will encourage maximum innovation allowing the most efficient designs to be explored for the scheme. This process may also be built into more traditional tendering processes.
- Accountability for the asset design, construction and service delivery is very high given that if the performance targets are not met, the operator stands to lose a portion of capital expenditure, capital profit, operating expenditure and operating profit.
- BOOT operators are experienced with management and operation of infrastructure assets and bring these skills to the scheme.

- Corporate structuring issues and costs are minimal within a BOOT model, as project funding, ownership and operation are the responsibility of the BOOT operator. These costs will however be built into the BOOT project pricing.

10.1.2 Disadvantages

- BOOT is likely to result in a higher cost of water for the end user. This is a result of the BOOT provider incurring the risks associated with 100 percent financing of the scheme and the acceptance of the on-going maintenance liabilities. The level of premium (if any) to be paid for a BOOT operator has not yet been determined.
- BOOT has no real track record in New Zealand and is still a relatively new concept internationally.
- Community and particularly water users may have a negative reaction to private sector involvement in the scheme, particularly if the private sector is an overseas owned company.
- The full benefits of economic development may not be realised if the BOOT provider is a sole source entity as local business are not as likely to provide materials and services to the BOOT provider, particularly during the construction phase. Although local providers may be able to compete on an individual component of a scheme, sharing the whole project margin within the sole source entity will make it more difficult for local businesses to complete.
- Management and monitoring of the service level agreement (operating contract) with the BOOT operators can be time consuming and resource hungry. Procedures need to be in place to allow users to assess service performance and penalise the BOOT operator where necessary. This is particularly the case with maintenance requirements. The users do not want to take over an asset at the end of the operating period that has no useful life remaining and high deferred maintenance requirements.
- A rigorous selection process is required when selecting a BOOT partner. Water users need to be confident that the BOOT operator is financially secure and sufficiently committed to the New Zealand market prior to considering their bid.

10.2 BOOT EXAMPLE - KAIPARA DISTRICT COUNCIL

Kaipara District Council is in the process of undertaking one of the first BOOT projects in New Zealand to fund the development of a wastewater treatment station for the Mangawhai Harbour on the East Coast of the North Island. Tenders have been short-listed and final proposals are due in April/May 2002.

Key lessons from Kaipara

- 7 responses were received to the “request for interest”, demonstrating that BOOT providers (both overseas based and New Zealand consortiums) are active in New Zealand and looking for projects.
- The project value ($10 – $20 million) is at the low end for a BOOT provider, but Kaipara was seen as a chance for these providers to get a reference site in New Zealand and then attract larger contracts.
- The BOOT providers that made the shortlist were the ones that were willing to accept higher risks, including compliance with environmental regulations.
- Project management skills were accessed from Australia given New Zealand’s general lack of experience with management of BOOT projects.
- The Victorian based framework was applied to this project without significant alteration, demonstrating that this would be a good starting point for New Zealand in developing our own BOOT management framework.

10.3 PUBLIC VS PRIVATE BOOT PROVIDERS

BOOT providers are typically either large international corporations (e.g. Tyco, Lend Lease, Thames Water) or a consortium of private companies with specialised skills (i.e. engineering companies, construction companies, financiers).

These private companies are established in the market and have delivered many large-scale infrastructure projects internationally.

As an alternative to private BOOT providers there may be an opportunity to fund large-scale water enhancement projects by developing a public BOOT provider.

For example:

A public BOOT provider may be made up of the following parties:

- Local government (as owner and financier).
- Design, Build, Operate (DBO) provider (as builder and operator).

Provided the scheme proves to be financially feasible, a public BOOT may work in the following manner:

- Local government could access 100 percent debt funding for the scheme over an extended repayment period, based on the ability to rate water users, and the secondary security of the general rating base.
- A DBO provider could be engaged to build the scheme and then operate it for the period of the debt finance.
- Funding, operating and other overhead costs would be recovered from water users through rates set on a take-or-pay basis with a variable component for water consumption.
- At the end of the funding and DBO period, the scheme could be transferred back into water user ownership.

This may make a BOOT model affordable for the scheme, given that there is no commercial return requirement built into this public BOOT model.

There are serious implications for local government taking on significant amounts of debt secured ultimately by general ratepayers that must be worked through before this could be considered a valid option. Local government investment criteria and prioritisation in relation to equity investment has been outlined further in the study on the *Role of Local Government*.

10.4 KEY UNRESOLVED ISSUES

BOOT has not been applied to a water enhancement scheme in New Zealand, and therefore there are a number of unresolved issues relating to the delivery of this model for water enhancement schemes. These have been outlined below:

Unresolved Issues for Water Users

- *Affordability*
  BOOT offers significant advantages to a water enhancement project including full capital funding and assumption of construction and operating risk, however, the premium paid for these advantages has not yet been determined.

- *Risk transfer*
  The process of risk identification and optimisation as it relates to water enhancement schemes in New Zealand has not been completed to date. This is key information required

to understand the additional value provided by a BOOT model for funding and construction.

- *Contract Term*
  BOOT providers have indicated that the contract term is expected to be approximately 25 years. This has still to be analysed further and resolved.

- *Protection from corporate failure*
  Water users will require legislative protection against corporate failure to ensure that there are "step in" rights available to ensure continued operation of the scheme.

- *Tradability of water rights*
  Given that a BOOT model is premised on long-term supply agreements, it is unclear what the BOOT provider's position will be in relation to tradability of water rights between users.

Unresolved Issues for BOOT Providers

- *Quality of customer supply contracts (affordability)*
  Internationally BOOT models have primarily been applied to the provision of Government core services. As Government is the customer, there is no real issue with the financial credibility. However, with a water enhancement scheme, the customers are the individual water users with a range of capacities to meet the ongoing commitments. It is unclear whether a BOOT operator will consider these customers sufficiently credit worthy, or whether additional guarantees will be required.

- *Supply/ownership of water*
  The Resource Management Act 1991 (RMA) does not provide long-term security over access to water. Additional conditions may be added or altered by Regional Council at any stage, impacting the viability of the scheme. BOOT operator response to this legislation is unknown.

- *Risk transfer*
  As outlined above, the risks expected to be managed by the BOOT operator are not clear at this point.

- *New Zealand legislative and control environment*
  The New Zealand legislative and control environment is new to BOOT operators and it is unclear whether there are changes required to the current investment environment to better facilitate BOOT investment. This includes a review of taxation policy.

Implications for Funding

BOOT is an exciting funding opportunity for water enhancement schemes to consider. However, there are potentially serious implications for both water users and BOOT operators if this opportunity is considered on an ad-hoc basis by individual schemes without a structured framework.

For example:

- BOOT bids can cost an operator millions of dollars to prepare. BOOT providers will not be responsive to this market if the bids are used to "test the price" rather than having a firm commitment to select a provider.

- Similarly, water users need to be fully aware of the commitment they are undertaking and know that risks have been transferred appropriately before signing a long-term commitment.

The Partnerships Victoria framework (see study 1 – Review of international models and experiences) provides a solid foundation from which to review the opportunities within BOOT funding in New Zealand. As discussed in Study 1, a Government funding contribution for an investigation of a BOOT as it relates to a pilot water enhancement project would assist to clarify these issues and could be used as a basis for a national framework/template for individual schemes to use when considering BOOT opportunities.

11. Risk Identification & Mitigation

11.1. PRIVATE SECTOR INVESTMENT

The following risks impact on the financial viability of a water enhancement scheme and therefore are risks to both debt and equity providers. The key difference between debt and equity risk is that debt providers (particularly under a business finance model) generally have their investment protected with some form of security while equity investors have their total investment exposed.

A schemes ability to raise debt and equity finance will be dependent on how well the following risks can be addressed and mitigated.

Risk	Examples	Mitigation
Construction risk	• Construction overruns add significant cost to the total capital sum requiring additional funding exposure. • Time delays in completing and commissioning the scheme add significant cost to the capital sum and negatively impact on water users on-farm developments.	• Research the background and financial strength of the construction company. Can they manage a contract of this capacity and absorb cost overruns if necessary. • Enter into fixed term, fixed price contracts with construction companies • Ensure strong penalty clauses or cost sharing arrangements are included within contracts for time delays and cost overruns • Consider risk transfer to DBO or BOOT provider
Environmental risk (Supply risk)	• New conditions attached to resource consent impacting on access to long-term water supply putting the scheme in jeopardy. • Significant additional cost incurred to rectify environmental damage caused by the scheme.	• Ensure the scheme is always operated within the conditions of the resource consent. • Obtain insurance where possible to protect against large-scale environmental damage. • Consider risk transfer to DBO or BOOT provider
Take-up risk	• Water users are slow to purchase rights to the scheme (waiting to see if it works first) making the scheme uneconomic for those users who have committed early. • Commitment is made but on-farm development is slow (capital constrained) impacting on a water users ability to meet charges.	• Fully investigate the opportunities for staging the development to meet demand. • Ensure minimum commitment has been received from water users in the area prior to approaching a financier. • Negotiate with local and/or Central Government to secure revenue-underwriting support for the scheme. • Structure company in such a way that it is attractive for private investment lowering the requirement for water user equity.
Operating risk	• Operating costs exceed financial forecasts making water uneconomic for water users to purchase.	• Fix as many operating risks as possible to provide certainty i.e. fixed funding, electricity hedging environmental damage. • Consider risk transfer to DBO or BOOT provider.
Major maintenance risk (including natural disaster)	• Scheme requires major unscheduled maintenance, imposing a significant cost on the scheme to be funded by water users.	• Obtain insurance where possible to protect against large-scale maintenance and damage including loss of profits. • Consider risk transfer to DBO or BOOT provider
Climatic risks	• Scheme generates no revenue from water users during very dry or very wet seasons, meaning revenue does not cover fixed costs.	• Ensure water-user sign long-term take or pay contracts to cover fixed operating costs.
Commodity market risk	• Commodity prices fall significantly reducing farm incomes to the point where users cannot meet water charges.	• Provide research on commodity fluctuations and ensure that financial feasibility of the scheme is still valid given the expected fluctuations in commodity prices.

Risk	Examples	Mitigation
Water trading risk	• Uncontrolled water trading forces the price of water rights to excessive amounts impacting on a new users ability to pay scheme water charges.	• Formal water trading markets allow market forces to dictate the price for water and help to ensure that water is used most efficiently.
Political risk	• Changes in legislation or regulation directly impacting on the scheme viability or on water user economics i.e. conditions imposed under the Kyoto Protocol	• This is normal business risk
Public liability risk	• Scheme pipe or dam bursts flooding houses, damaging property and crops. Scheme is sued for significant sum for damages	• Obtain insurance where possible to protect against large-scale maintenance and damage including loss of profits. • Consider risk transfer to DBO or BOOT provider
Ownership structure risk	• Scheme is structured as a Co-operative Company. Certain commodity prices fall, and therefore these users do not take water for a period. These users apply under legislation to have the company repurchase shares to remove any take or pay commitment impacting the financial viability of the remaining shareholders.	• Ensure the ownership structure is the most appropriate for both debt and equity funding providers, with shares classes protecting investor objectives.
Bankruptcy risk	• Corporate landowners enter long-term supply agreements, but go bankrupt when yields are low leaving the scheme limited recourse for recovery.	• This is normal business risk • Scheme needs to be aware of any concentrations of credit risk with an individual property and manage these customers appropriately.

11.2 PUBLIC SECTOR INVESTMENT

Public sector financial assistance may be in the following forms:

- provision of debt;
- provision of equity or hybrid equity;
- provision of financial guarantees;
- provision underwriting revenue capacity.

Each form of assistance has a different risk profile and will depend on the provider of the assistance whether central or local government. Risks and risk mitigation related to central and local government financial assistance have been addressed within studies of their respective roles.

12. Constraints Under Legislative & Regulatory Environment

There are some constraints under the current legislative and regulatory environment in New Zealand as it relates to investment in large-scale water enhancement.

An analysis of the key legislation is outlined below and related to investment in water enhancement.

Resource Management Act 1991 (RMA)

Resource consent can be issued to a water enhancement scheme for the take and use of water for a period of up to 35 years. However the Act includes provisions that give Regional Councils wide ranging powers to review a consent at any time, alter existing conditions of the consent and add new conditions if it sees fit. New or altered conditions can have a significant impact on a schemes access to water.

Legislation that has the ability to limit the supply of water clearly has an impact on the financial viability of a scheme and therefore creates risk for an investor (particularly project finance and BOOT structured investments where minimal security is offered by the scheme). Investors must be reassured by Central and regional Governments that the risks related to consent review are minimal provided appropriate environmental planning has been considered and on-going consent requirements met. Central Government might consider additional legislative protection for investors in a scheme where existing consent conditions have consistently been met.

Electricity Industry Reform Act 1998 (EIRA)

Where a scheme includes a storage facility with the potential to generate electricity, the EIRA prevents significant investment (more than 20 percent of equity) from an electricity lines business.

This legislation prevents investment from electricity lines companies who would rather see irrigation investment as a strategic investment. Government could consider providing dispensations for investment from these entities into water enhancement schemes that do not have power generation as their primary source of income.

Tax Depreciation Rates

Tax depreciation rates for water enhancement investments are conservative in New Zealand compared with similar nations (primarily Australia and USA). This makes New Zealand a less attractive investment environment for multi-national corporations.

Government would stimulate investment into water enhancement scheme (both on-shore and off-shore investment) if it were to review tax depreciation rates with a view to accelerating depreciation write-offs.

Public Investment Constraints

Key legislation impacting on central and local government investment have been discussed within the studies on their roles.