SUBMISSION: Tax Working Group – Interim Report of the Tax Working Group

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(Andrew Curtis, CEO Irrigation NZ)

IrrigationNZ (INZ) would be happy to engage with representatives of the Tax Working Party around any of the issues raised in this submission.

General Comments on the Interim Report

1. INZ's submission focuses primarily on the possible introduction of a water tax/ royalty.

2. We agree with the approach he Tax Working Group has taken by treating water pollution and the taxation of this as a separate issue from water abstraction. They are two distinct issues and need to be considered separately.

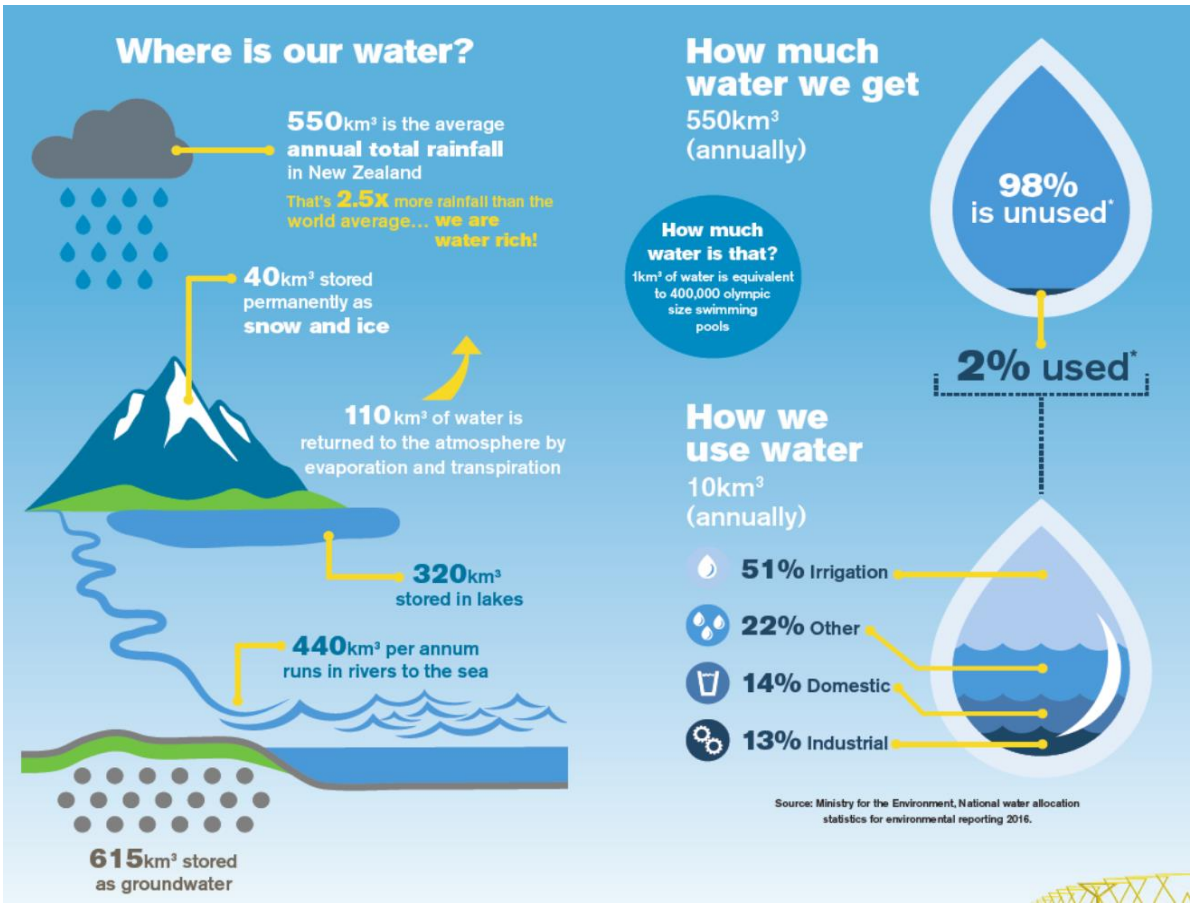
3. We also agree with the Working Group that any discussion around a tax on water abstraction needs to cover all types of water users including residential, commercial, hydro-electric and agricultural water users. Singling out some types of water users to pay a tax while excluding other users provides opportunities for tax avoidance and is not equitable.

4. We think the tax working group needs to add to its report the role of tax incentives in providing for more efficient resource use and improving water quality. Exploring how government could incentivise the uptake and future development of precision agriculture technologies and techniques through the tax system would be hugely beneficial to the NZ economy over the longer-term.

5. We have provided below some further background information to help inform the consideration of a water tax.

Water availability and use in NZ

6. The diagram below shows water availability and use in New Zealand based on Ministry for the Environment statistics. 1km^3 of water is equivalent to 400,000 olympic size swimming pools. New



Zealand receives 550km^3 of rainfall on average per year, which is around 2.5 times the world average.

7. Hydro-electricity is a significant water user – for example in Canterbury, 55% of water is consented for hydro-generation, 29% is consented for irrigation and 16% is consented for other uses.

8. Excluding hydro-electric use, approximately 51% of water of the 2% of our annual rainfall which is used by humans is drawn on for irrigation.

9. To discuss a water tax, its necessary to have some understanding of the factors affecting water use for irrigation.

10. Who is using irrigation?
    - 90% of New Zealand land growing vegetables is irrigated
    - Over 58% of commercial fruit and wine production is from irrigated land
    - Over 52% of cereal crops are grown on irrigated land
    - About 26% of New Zealand dairy grazing land is irrigated
    - Around 2% of New Zealand sheep and beef grazing land is irrigated

11. New Zealand's total irrigated land is approximately 800,000 hectares, or 7% of its total agricultural land. Of this:
    - 59% is used for dairy
    - 17% for Sheep & Beef
    - 13% Grain Crops
    - 4% Vegetables
    - 3% Wine
    - 2% Fruit
    - 2% Other

12. The above figures illustrate that while dairy is the biggest single user of irrigation, fruit and vegetable growers, arable farmers and winegrowers are actually more reliant on irrigation.

Determinants of irrigation demand

13. There are a huge number of factors which influence water demand and water consumption is highly variable from one season to another. Regional Councils have looked at introducing targets around reducing water consumption on farms to monitor the effectiveness of their strategies to encourage water efficiency but have found such targets to be meaningless as there are too many variables involved.

14. The main variables around water use are:
    - The type of water use (agricultural, domestic, commercial)
    - Physical location of where water is to be used which determines soil water holding properties, and the typical rainfall and climate conditions
    - The actual seasonal variations in rainfall and climate conditions (wet versus dry years)
    - The type of farming activity and resulting range of crop demand

- Limits on water availability (eg consents conditions, water restrictions) generally regarded to as the reliability of supply
- The cost of using water (electricity, irrigation scheme charges, the cost of installing irrigation).

15. Irrigation of crops will always use more water than domestic consumption. This is unavoidable – unfortunately we cannot change the underlying physiology of plant water use (transpiration). For example, an average household in Auckland only requires 179 litres of water per day, whereas a 1-hectare apple orchard in Hawke's Bay requires an average of 17,500 litres of water per day over the growing season for an export apple crop (noting that actual daily crop demand ranges considerably over this period).

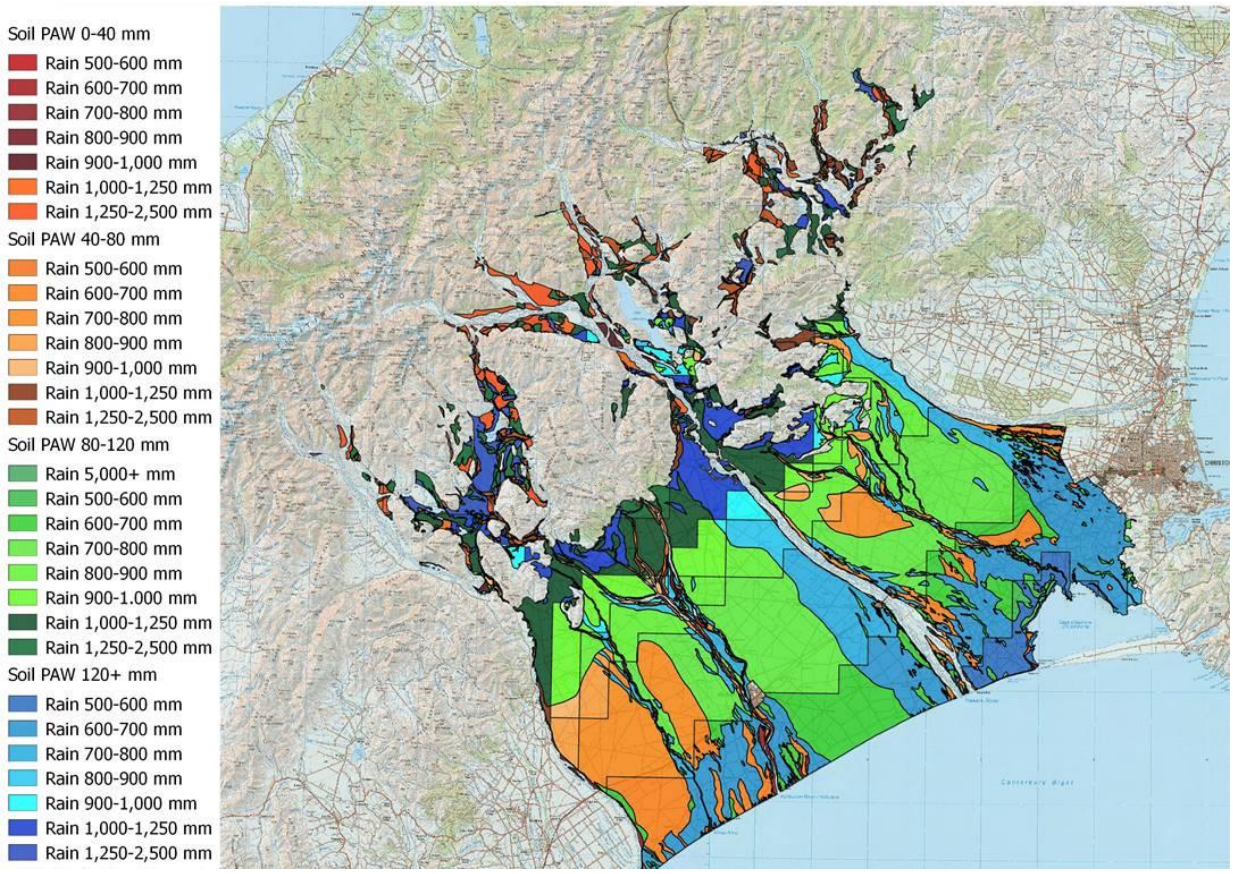
16. Irrigation demand is closely correlated to climate. For example, if a tax on water use was introduced, over 80% of the amount paid by irrigators would be raised in NZ's four driest regions (Canterbury, Otago, Marlborough and Hawkes Bay). Households in Canterbury regions such as Christchurch and Selwyn would also pay significantly more on average than households in Wellington and Auckland as their water consumption is higher as they reside in drier regions. However, within regions and catchments there is also a huge variation in climate, for example in Selwyn's foothills rainfall can be over 1,000mm per year, while on the coastal plains it can be as little as 500 mm per year.

17. NZ's maritime cyclical climate means there are large variations in climatic conditions from year to year and therefore the need for irrigation. In an El Nino season east coast NZ typically receives much lower annual rainfall, experiences drier conditions and droughts often occur. As a result demand for irrigation can be significantly higher than normal. The difference in water use between a 'dry season' and a 'wet season' can be as much as 300 %.

18. Irrigation demand is also highly correlated with soil water holding capacity – different soils have different capability to hold water and those with low water holding capacity will require a small amount of irrigation to be applied little and often throughout the season. NZ's soils are highly variable between regions and also within a catchment particularly where alluvial processes dominate their formation.

19. The diagram and table below show the highly variable nature of irrigation demand upon the Canterbury Plains (within a region, catchment and sub-catchment). The irrigation demand volumes have been derived through the IRRICALC water allocation model – which uses climate, crop and soil types to provide a volume that equates to a 1 in 10-year drought scenario. This is how water allocation is set in NZ. The figures demonstrate how administratively complex it would be to set a price to drive irrigation water use behaviour without creating perverse outcomes.

Crop	Soil PAW	Rainfall	Seasonal Demand
Pasture	40 mm	550 mm	700 mm
Pasture	40 mm	850 mm	520 mm
Pasture	80 mm	550 mm	630 mm
Pasture	80 mm	850 mm	420 mm
Pasture	140 mm	550 mm	580 mm
Pasture	140 mm	850 mm	380 mm



The existing costs of using water

20. Irrigators already pay for the costs of using water. Typically it costs around $5,000 per hectare to install a modern efficient centre pivot irrigation system. So, a farm with 150 hectares of irrigation would pay $750,000 for the installation cost of the system.

21. Regional councils charge irrigation permit holders for resource consents. This recoups the cost of water resource management for the council. Costs include:
    - administration and technical review associated with consent application and/or renewal (consent processing and internal/external review)
    - administration and monitoring associated with consent compliance (water metering, flow or water level monitoring)
    - "State of the Environment" and generic compliance monitoring and science investigations (surface and groundwater flow, level or quality monitoring and investigations) – section 36 charges

22. Irrigation schemes charge their shareholders an annual water supply charge. Schemes use this income to cover the cost of building, operating and maintaining water supply infrastructure and also for environmental initiatives. Mechanisms for this include volumetric, set charges, and combinations thereof. Irrigators who source their water from groundwater will need to pay for the costs of installing bores and the electricity costs of pumping the water. Groundwater irrigators effectively pay

a volumetric charge – the more the pump the more they pay – this has been a significant driver of efficiency in recent times.

23. When all these different charges are combined, typically it costs a modern efficient irrigator around $1,000 per hectare to use water.

Additional council rates and government tax revenue

24. In NZ, the value of access to water is captured within an irrigated property's land value. Typically land values are $6 - $10k/ha greater on an irrigated property than equivalent dryland. Irrigated farms also have a greater level of capital improvements, the irrigation infrastructure for example. Irrigators therefore already pay a 'water charge' in the form of significantly increased rates.

25. IrrigationNZ carried out a case study (below) on a farm which shifted from having a small area of irrigated land to being nearly fully irrigated which demonstrates the difference irrigation makes to government tax take.

Example – Mixed cropping farm in Canterbury

	Pre-irrigation conversion	Post irrigation conversion
Irrigated area	26 ha border dyke irrigation	208 ha spray irrigation
Use	Sheep/beef/deer/cropping	Sheep/beef/dairy support/cropping
Productivity	280kg/CWha meat/ wool 280 Tonne grain	740kg/CWha meat/ wool 400 tonne grain
Gross income	$800 per hectare	$1,950 per hectare
Tax paid	$0-$15,000 per annum	$60,000-$100,000 per annum

26. The above case study also added new employment opportunities on the farm, an additional 2 Full-time Employees, which provides for increased income tax to the government.

27. Several New Zealand studies of irrigation scheme development have found that for every 1,000 ha of irrigation developed at least 50 jobs are created and for high value horticulture this rises to over 500. Much of this employment is off-farm in industries like food processing, agricultural services and machinery. Irrigation creates prosperous communities - there is proven socio-economic benefit to both the regional and national community from the productive use of water. A 2014 study by NZIER estimated that irrigation adds at least $5.4 billion to New Zealand's GDP[1].

28. One example of the value of irrigation was the socio-economic and environmental impact assessment report completed on the Kerikeri Irrigation Scheme in 2016 by Rationale, after it had been operating for 30 years. The assessment found that the scheme had created 1,300 additional jobs and added $106 million per year to the Northland economy. 6.5% of all jobs in the Far North District were due to the scheme's operation. There had also been significant benefits to the community in Kerikeri and the surrounding area with people living in this area having higher rates of home ownership, higher household incomes and higher rates of full-time employment than the rest of Northland.

[1] NZIER, Value of Irrigation in New Zealand, 2014

29. Creating additional jobs and income is beneficial for rural communities, councils and the government as it generates additional rates, business income tax and income tax. We would question whether there is a case for an additional tax on water use given the substantial and broad socio-economic benefits which already accrue to the government, councils and communities. The impact of an additional water tax upon the existing tax take would need to be clearly understood as part of the analysis of any proposed water tax.

The complexity of water pricing

30. The idea of using a water tax as a way of managing demand for irrigation water through pricing is highly complex. This is clearly highlighted above through the example given in the water demand section of this submission.

31. We note the discussion paper mentions varying water pricing depending on time and place. The example shows there would need to be several different price bands for using water at the sub-catchment level and this would come at significant administrative cost in relation to the revenue received.

32. With regards to pricing based on scarcity of water in particular locations, if we look at some of the most water scarce regions of New Zealand, farmers are already under significant pressure to cope through very challenging farming conditions. For example, farms in Central Otago might typically receive around 300mm of water annually, less than s third of the annual rainfall of Auckland and Wellington. Irrigation is used on the Central Otago farm to supplement their low rainfall.

33. In our most water scarce regions such as Central Otago and North Canterbury traditional sheep farming predominates. Irrigation is typically used on part of the farm to provide a reliable source of feed for stock during droughts and drier summers. Water is limited in these regions, and this limits farmer's ability to convert to other farming models.

34. Introducing a higher price for water in water scarce regions such as Central Otago or North Canterbury could make farming in these regions unviable. Irrigation helps provide a secure food source for stock in drought prone regions. Without this security of knowing that farmers will be able to afford to grow pasture with irrigation to feed stock through droughts, farming becomes both ever more stressful and less viable as a business.

35. A water tax would also introduce a further comparative disadvantage between drought prone, water scarce regions and water rich regions. Farmers operating in regions such as Central Otago already pay considerable costs to install and use irrigation water in order to be able to have more consistent crop and pasture production. Farmers operating in water rich regions such as Waikato, the West Coast or Southland do not have to pay for the cost of installing and operating irrigation and are also able to operate more profitable farming models such as dairy farming.

36. Farmers in Central Otago may draw on water from their local mountains to use as snow melt and store water in reservoirs on their farms and use this water to make up for the shortfall in rainwater they receive. Should these farmers be charged for the use of this water? Many councils have policies which encourage homeowners to install rainwater tanks on their properties. If a water tax was to be introduced would these homeowners also get charged for the water they store? Both the farmer and the homeowner have shown the foresight to install infrastructure to store water on

their property in order to use it when needed so should they not be treated similarly?

37. We have significant concerns about whether its equitable to charge farmers for using irrigation water while other farmers use similar amounts of water on their farm which they receive for free as rainfall. It is beneficial for both farmers and urban households to be encouraged to store and use water, and taxing this activity will not encourage it.

Adding to the cost of water may lead to poorer environmental outcomes

It is be useful to look at some of the issues around introducing a water tax in relation to some recently developed and proposed water infrastructure projects.

Waimea Community Dam

38. One example is the Waimea Community Dam. Supported by environmental groups, higher minimum river flows have been introduced for the Waimea River by local councils. These will result in less water being able to be drawn from the river by Tasman District Council for its residential water supply. Commercial and agricultural water users will also have to reduce the amount of water they draw from the river due to these changes.

39. The development of the Waimea Community Dam is the most cost effective solution to provide adequate water to all water users and allow higher minimum flow requirements to be met. The project is supported by local councils and by National, Labour and NZ First MPs. The dam is designed to provide water to urban, commercial and agricultural water users and to supplement the Waimea River flows in times of low flow. Without the development of a new dam, Tasman District Council has said that severe water restrictions would be required often over summer in residential areas. Industrial, commercial and agricultural water use would also be significantly restricted.

40. The cost of developing the dam infrastructure has been a significant issue affecting whether the new dam progresses. It is estimated to cost approximately $102 million to construct. An increase in the project construction cost nearly resulted in the dam not progressing.

41. A water tax or a charging structure to provide revenue to the government would add to the cost of accessing water from the dam for residential, commercial and agricultural water users. The additional ongoing cost could have had the effect of making a project such as this this become unviable. There are a number of other irrigation schemes that also provide water for multiple purposes – such as domestic and rural drinking water, stock water, for environmental river flows.

42. It is estimated that the cost of not constructing the Waimea Community dam would result in nearly $1 billion being lost from the Tasman/ Nelson economy over the next 25 years. Not constructing the dam would also result in poorer environment outcomes. Water would not be able to be released from a dam in times of low flows and it would be difficult to achieve new higher minimum river flows without the dam.

Central Plains Water

43. This modern irrigation scheme was completed recently. The new scheme is helping address environmental problems and contributing to economic and community well-being.

44. Selwyn is one of the regions where groundwater has been overallocated. The origins of the scheme came from work Selwyn District Council and Christchurch City Council carried out which identified that developing a new irrigation scheme which shifted farms from using groundwater to using alpine water and expanded the irrigated area in Selwyn would have significant economic benefits for both Selwyn and Christchurch and would also help resolve the problem of water over allocation.

45. The economic benefits of the development of the scheme have been estimated at up to $374 million, and the benefits will accrue mainly to people living in Selwyn and Christchurch, and to the government who will benefit from additional tax revenue.

46. Following the completion of Stage 1 of the scheme, irrigators reduced their use of groundwater to only using 25% of their allocation in 2016/17, leaving 80 million cubic metres of water in aquifers. The scheme has also agreed with Environment Canterbury that it will provide 45 million cubic metres of water into the Selwyn River per year to replenish flows. The river is fed by groundwater so it will benefit both from the groundwater replenishment programme and from the reduction in groundwater usage across the scheme area which will enable it to have higher flows in the future.

47. Groundwater levels in Selwyn are already rising thanks to the switch over to alpine water as part of Stage one of the Central Plains Water and higher than average rainfall in 2018. Over time, other water users in Selwyn are expected to benefit from this rise in groundwater levels.

48. All farms connected to Central Plains Water must have Farm Environment Plans in place. They are audited on their environmental activities, irrigation efficiency and must meet targets to substantially reduce nutrient leaching within the next few years.

49. Central Plains Water is typical of newer irrigation schemes which have a range of environmental requirements included in the scheme consent. For example, 50% of the water stored in the Opuha Dam is to provide water for environmental river flows.

50. The development of Central Plains Water is a key component of the plan developed by the community representatives on the Selwyn Waihora Zone committee to meet a range of environmental, social and economic goals around water use.

51. In some cases it is already more expensive for farms connected to Central Plains Water to access water via the scheme than to use groundwater. Introducing a requirement to pay a tax on water use to the government would make it more challenging to develop new irrigation development projects such as Central Plains Water by adding to the ongoing cost of using water from the scheme.

52. Without the development of the scheme, the district would continue to face significant challenges around access to groundwater which affect the whole community – including urban residents, lifestyle property owners and farmers.

The impact of a water tax – an example

53. Even a seemingly minor water tax will remove significant amounts of wealth from provincial communities and regions. The table below sets out the estimated cost of a charge of $0.10 per m^3 of water on the Lower Waitaki community.

Scheme	Water Allocation (million m^3)	Annual water tax (allocation)	Annual water tax (average actual use)	
North Otago Irrigation Company	130	$13 million	60%	$7.8 million
Lower Waitaki Irrigation Company	328	$32.8 million	60%	$19.7 million
Morven Glenavy Ikawai Irrigation Company	300	$30 million	60%	$18 million
Upper Waitaki Community Irrigation Company	22	$2.2 million	60%	$1.3 million
Maerewhenua District Water Resource Company	9	$0.9 million	60%	$0.5 million
Waitaki Independent Irrigators	55	$5.5 million	60%	$3.3 million
Total	**844 million m^3**	**$84.4 million**		**$50.6 million**

54. The above schemes have around 600 farmer shareholders in total. A tax based on the above rate would cost each farm an average of approximately $83,000 based on their actual water use. Even a smaller tax of $0.01 per m^3 would cost an average of $8,300 per year for each farm and perhaps double that amount in a dry year when more water is used. Typically, most farms have some unirrigated land and during drought years less income is available to pay a water tax at the time when water is most needed on the farm.

55. Using the above example, it's not just farms who would be affected by a water tax. Removing $50 - $80 million per year from a regional economy would have widespread implications for the wider community who provide services to farms and rely on their business. This includes impacts on jobs, general economic well-being as well as the provision of services.

Arable and Sheep/ Beef farms will struggle to pay a water tax

56. We are concerned of the impact of a water tax on those farmers least able to pay.

57. To take two examples of an arable farmer and a dairy farm using irrigation:
    - An arable farm typically has a gross income of around $2,500 per hectare
    - A dairy farm typically has a gross income of around $6,000 per hectare.
      At a cost of 2 cents per 1,000 litres, a water tax would add around a cost of $16,000 for a 200 hectare arable farm and around $22,000 for a 200 hectare dairy farm operation.

58. Clearly the dairy farm, with a much higher income per hectare has much more ability to absorb the additional cost of a water tax, while for an arable farm, a water tax is a significant new cost.

59. The example we provided earlier of a South Canterbury sheep/beef/dairy support and cropping farm showed this case study had a gross income of around $2,000 per hectare and would also have a lot less ability to pay than a dairy farm earning three times as much per hectare, and would be

representative of the type of income level many sheep farms would have.

60. In a few areas, arable and sheep and beef farms may still have the option to intensify their farming operations in order to fund a new water tax. However, shifting to more intensive farming models is contrary to the outcomes the government is seeking.

61. Irrigators certainly mentioned they saw intensification as an option to fund a water tax in the 2017 survey IrrigationNZ carried out of 120 of our irrigator members. In this 40% of farmers said they would consider increasing stock numbers on their farm to pay for a water tax, 48% of the arable, sheep, beef or mixed cropping farmers surveyed also said they would consider converting their property to more intensive uses.

62. Where intensification is not possible, a water tax would hit arable and sheep and beef farmers hard. New Zealand farmers are disadvantaged by their distance to markets which make exporting cereals uneconomic and for farmers to be able to shift to higher value crops there needs to be demand for what they produce.

Much of the cost of a water tax will fall on a small subset of farmers

63. To be sustainable, a tax also needs a broad base to fund the tax costs. When a tax falls on a small group, it can cause financial burden and is inequitable.

64. Much of the cost of a water tax will fall on a small subset of farmers who use irrigation. Nationally, there are 12,500 irrigation consents in operation currently and we estimate around 7,000 of these are for commercial farming operations with the other consents issued predominantly for lifestyle properties. These commercial farming operations are predominantly located in small number of regions – Canterbury, Otago, Marlborough and Hawkes Bay. This is very narrow tax base to bear much of the tax cost, as these farms represent less than 2% of all businesses in New Zealand.

A water tax adds costs and makes installing more efficient irrigation systems more difficult

65. Irrigation systems in New Zealand are very efficient when compared to irrigation systems worldwide.

66. Based on Agricultural Production Survey figures, in 2017 87% of New Zealand irrigated land was irrigated with spray irrigation systems. 5% of land was irrigated with flood irrigation systems and 8% was irrigated with drip micro systems. Worldwide, 86% of land is irrigated with surface (flood) irrigation and only 14% by spray or drip irrigation.

67. Spray and drip irrigation is much more efficient than flood/ surface irrigation. Typically when a property owner switches over from using flood to spray irrigation they can irrigate the same area while using 20% less water. Flood irrigation also results in more nutrient losses into groundwater and surface water as there is more drainage into soils and waterways.

68. Limits on water availability and stricter environmental standards have been driving a shift from flood and older types of spray irrigation system to the adoption of modern spray or drip irrigation systems. This is reflected in Agricultural Production Survey figures which showed that in 2012, 13% of irrigated land was irrigated with flood systems and in 2017 this had fallen to 5% in 2017.

69. Currently, the breakdown of the type of irrigation systems used in NZ is:
    - 54% of systems are modern centre pivot or linear moves
    - 32% are older types of spray irrigation
    - 8% are modern drip-micro systems
    - 5% are flood irrigation systems.

70. While farmers using less efficient irrigation systems like other spray systems or flood irrigation are keen to continue to modernise their irrigation systems, the main barrier to doing this is the cost of installing irrigation. As previously mentioned, typically it costs around $5,000 per hectare to install a centre pivot irrigation system. As an example, replacing 150 hectares of and older irrigation system with a better performing, more environmentally friendly and modern system would typically cost around $750,000. Sourcing water from a modern irrigation scheme typically costs around $1,000 per hectare.

71. Developing and using irrigation is one of the most significant investments that can be made by farmers. Adding irrigation will allow yields to double, but more importantly it allows production to continue through droughts.

72. The demand for irrigation is often consumer and supplier driven, as farmers and growers producing vegetables, fruit, wine, wheat and cereal crops cannot obtain contracts with without having irrigation in place. Without irrigation they cannot guarantee their produce will meet the necessary quality and quantity requirements.

73. For farmers and growers, installing irrigation is a major but necessary expense. Investing in more modern irrigation systems, along with technology like soil moisture monitoring, allows irrigators to make the most efficient use of water, but it is expensive to utilise.

74. Policies which add additional cost for irrigators make it more difficult to fund the cost of installing more modern irrigation systems. Introducing a new water tax may result in farmers reducing spending in modernising their irrigation systems as they can't afford this investment.

75. This view is supported by the survey IrrigationNZ completed of our members in 2017, where 45% of the 120 irrigators we surveyed they would look at reducing investment in funding more efficient irrigation systems because they would be unable to afford this cost if a water tax were introduced.

76. It is also worthwhile discussing whether a water tax would drive land use changes and water use efficiency on different types of farms.

77. Taking the example of the arable and the dairy farm used earlier, it's worthwhile noting a couple of points:
    - Irrigated dairy farms are typically fairly recent conversions (usually 5-20 years old) with the largest number of irrigated dairy farms located in Canterbury. These farms usually have very efficient irrigation systems installed such as centre pivot systems. A water tax would therefore not be very effective as a way to encourage irrigated dairy farms to modernise their irrigation systems for more efficient systems as most farms already use modern systems

- Irrigated dairy farms have invested millions in the farm infrastructure needed to operate as a dairy farm and are therefore unlikely to be influenced by a water tax to change land use to a less profitable farming model even if it uses less water
- In areas where irrigated dairy farming is an option most regional councils already have rules in place which limit the ability of farms to convert to dairying, with regional councils and the government both signalling they will impose nutrient limits which will effectively prevent further dairy conversions. A water tax would therefore not be effective as a way to encourage less intensive land uses as this is already being regulated.
- Arable and sheep and beef farming operations often rely on less modern and less efficient irrigation systems. These farming models are less profitable than dairy farming. The cost of modernising their irrigation systems is the main barrier to these farms becoming more efficient in their water usage. Introducing a water tax at a significant cost per farm will reduce the funding they have available to finance new irrigation systems, therefore a water tax may act as a barrier rather than an incentive to improving water efficiency.

A water tax would be a unique barrier to increasing our agricultural exports

78. The idea of introducing a water tax has been extensively studied internationally but few countries have adopted such a tax. In the few areas where a tax has been adopted, such as Denmark and the Netherlands, irrigation has been exempted from the tax because of concerns around the financial impact on farmers, perverse effects and concerns the tax will make farmers uncompetitive internationally.

79. In many other countries, food production and farming is subsidised. New Zealand farmers are the least subsidised in the world. Internationally, other countries do not impose a tax on water usage for irrigation. The imposition of this tax in New Zealand would put Kiwi farmers and growers at a comparative disadvantage when competing against other countries. The government's goal is to increase the value of New Zealand's agricultural exports but adding a new tax which affects food producers would threaten our international competitiveness.

A water tax needs to be seen in the context of other regulatory costs farmers are facing

80. Both farming leaders and the government have signalled they want to see all farmers adopt Audited Farm Environment Plans in the future.

81. Audited Farm Environment Plans require farmers to take action to reduce environmental risks on their farm in a range of areas, including erosion, dairy effluent, irrigation management, riparian management (fencing waterways and planting) and nutrient management.

82. The plans are independently audited and there is an expectation that performance will improve over time. Farms required an independent nutrient budget to be prepared as part of the plans with the cost of this typically being around $2,000- $5,000. Specific actions will be required on each farm – such as upgrading dairy effluent systems, installing soil moisture probes to monitor when irrigation is needed, carrying out riparian planting and reducing fertiliser application or other actions such as reducing stocking rates to reduce nutrient losses.

83. The actions taken on farms will have a significant cost and can range from anywhere from $5,000 to $100,000 or more.

84. In areas where Farm Environment Plans are mandatory such as Horizons and Canterbury we are already seeing improvement in waterways. There is an expectation that the bar for standards farmers need to meet in their plans will be raised over time so farmers will need to continue to invest in activities and technology to improve environmental outcomes. Farmers need to have the ability to finance the continuing improvements needed on their farms and introducing a new tax for water use will reduce their ability to invest in these improvements.

A water tax would be complicated to design and difficult to implement fairly

85. Internationally, the idea of a water tax/ royalty has been considered by many countries but abandoned in all cases due to the complexity of designing and implementing such a charge.

86. To introduce a water tax, we need to confirm:
    a. Who would pay the tax and who would be exempt (or what activities would be exempt)
    b. How and by whom would the tax be collected (nationally or regionally)
    c. On what basis would it be collected (actual use or allocation)
    d. If actual use the monitoring accuracy required (Weights and Measures Act and Regulations)
    e. What is the tax rate and does it vary (activities and regional variations in water use)
    f. How it would be spent

87. Through the National Water Measurement Regulations 2010, all water users have been required to measure their water takes since 2012. Eight years on, there is still no national set of accounts for the approximately 12,500 irrigation take consents in New Zealand, despite irrigators having provided annual and in some cases live telemetered data to regional councils during this period. This task is far less complex than designing, implementing and monitoring a water tax on all water users nationally, yet it has not been completed yet in eight years.

About IrrigationNZ

88. INZ represents over 3,500 irrigator members nationally, including irrigation schemes and individual irrigators. Our members include a wide range of farmers/ growers – dairy and cropping farmers, horticulturalists, winegrowers. We also represent over 120 irrigation service industries – manufacturers, distributors, irrigation design and install companies, and irrigation decision support services.

89. As an organisation we actively promote best practice irrigation and carry out a range of training and education activities. Over the last 5 years we have trained over 3,000 irrigators on different aspects of irrigation best practice to improve water use efficiency.

90. INZ members share the same goals as other New Zealanders:
    - to see improvements to their waterways
    - to make a contribution to their communities
    - to make a living for themselves and their families.