The influence of privatisation on irrigation water rights in NSW.

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Abstract

Two important drivers for the redefinition of water rights in Australia since 1980 have been, firstly, the development of public policy for both environment/ sustainability and for water rights security, and secondly, the commercialisation, corporatisation and privatisation of institutions in the water sector. The reasons for embarking on privatisation are discussed, and the relationship of water rights to the operation and management of irrigation schemes explained.

Water rights for irrigators in publicly-owned and managed irrigation schemes in NSW before and after privatisation are compared. The altered relationships between water user, manager of the scheme and the government are explained. The paper details the process by which changes were negotiated and introduced, and identifies policy decisions and factors considered in the redefinition of water rights at two levels: the bulk water supply to irrigation schemes and the distribution of water within schemes to the irrigator's land.

Changes to water rights required consultation and the agreement of the rights holders. However, holders perceived themselves to hold rights in a form which differed from the legal definition. Both administrative decisions and the operation of water supply played an important role in defining the water received by rights holders. These arrangements, largely undefined to the water user, were considered adequate during a period when government policy favoured the development of water resources and water management policy change was relatively slow. However, with the changes in policy direction of the 1990s, water users began to seek actively new guarantees of continuing water supply.

Privatisation forced the government and water users to consider in a new light the separate but intimately linked aspects of water supply services, the right to take or receive water and the use of the water. The post-privatisation regime clarified these elements as well as altering the relationship of water rights holders to the government and irrigation scheme operators. The ultimate shift in location of power and decision-making is evaluated and discussed in the context of broader water management changes being made in Australia.

The paper concludes that privatisation resulted in a closer specification of some elements of water rights, and a greater distinction between water supply and water rights management functions of the government. The process of privatisation may also have affected the attitudes of irrigators towards general water rights reform, by increasing their awareness of legal issues and focussing their thinking on uncertainties which could result from policy change.

1. Introduction

This paper documents a significant institutional change – the privatisation of publicly owned irrigation schemes in New South Wales (NSW) and its impact on associated water rights – both the legal form of those rights and changes to the nature and location of decision-making about water. The paper also argues that, within the

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privatised irrigation schemes in New South Wales, the management of water – its distribution to end-users – is accomplished as a form of common activity and the water within the schemes has common property characteristics, even in a modern and privatised irrigation scheme.

1.1 Water rights and recent water sector influences

Water resources in Australia are subject to legal jurisdiction at the State level – a situation, which results from the formation of the Australian Commonwealth in 1901, when the former colonies relinquished certain powers to form the national government of Australia. Water, along with other natural resources remained a matter controlled by the states. All States in Australia have laws, which descend from the British legal systems and the common law, but each state jurisdiction makes its own laws. In recent years, there has been an increased emphasis on individual personal property rights in the context of natural resources. In particular, during the last decade, water users and governments in Australia have been developing the idea that *property rights* in water, along with water markets, will improve the allocation of water and its management (COAG 1995). At the same time, the privatisation of formerly public irrigation schemes has created a type of arrangement closer to a common property system for the water rights within the scheme, although the rights of individuals and the collective remain in tension.

Water management in Australia has been affected by a number of recent global trends. In the 1980s the two-pronged reduction of the scale of the government administration commenced – firstly questioning the continuing provision of *commercial* services by governments and secondly focusing on greater efficiency in the continuation of remaining services. In New South Wales (NSW), this emphasis started with the advent of the Coalition government in the early 1990s, which then corporatised its metropolitan water utilities. By the mid 1990s, the trend to commercialisation in government was explicitly agreed by the Council of Australian Governments (COAG) and all governments made commitments in this direction. The Commonwealth Government offered financial incentives in the form of substantial tranche payments, to the States to implement the reforms.

Australia had not fully adopted the water sector privatisation model as implemented in the United Kingdom, but has gone either to corporatisation, where the assets and business remain in with the government/s as the shareholders, or to private sector participation in various forms of franchise or partial privatisation. International water companies are now active in urban water services across Australia, but the irrigation sector has not attracted the same interest from the private sector. Nevertheless, whilst governments' policies supported the concepts behind commercial operation and private sector participation in irrigation, the irrigators themselves drove the thrust for autonomy.

The agreement by COAG of 1995 included the following commitments, which reflected global trends in water resources management: (a) full-cost recovery for water services, (b) water allocations and property rights, (c) promotion of water trading, (d) introduction of environmental water allocations and ensuring that new projects are environmentally sustainable and (e) institutional reform promoting (i) integrated natural resources management, (ii) separation of services from water resources management, and (iii) promotion of local management responsibility. Since 1995, these agreements (discussed in section 3) have had a critical influence on State governments in Australia and on the direction of their management of water resources.

Between 1990 and 2000, all the publicly owned irrigation schemes in New South Wales (NSW), with one exception, were firstly corporatised and then privatised.

They are now owned and managed by private companies established on a cooperative model. That is, the companies are subject to the full range of company (corporations) law, but have specific terms in their Articles of Association, which give irrigators the shareholder rights. In 1980, there was considerable suspicion in the minds of irrigators in government schemes about privatisation as a whole. One factor was their fear that the government would withdraw financial support and they would have to pay more for their water. Although they resisted water price increases vigorously, they understood that the cost of water supply was not being fully met by them at that time. However, as discussed later, their views changed radically and they ultimately agreed to take control of their own irrigation schemes and their own destiny.

Water rights, for the purposes of this discussion, are taken to include not only the legal and formal entitlements to receive a water supply, but also the range of management and administrative decisions, which also affect that supply. Thus, the right to water of a particular irrigator can be affected by the operator of the dam from which it is sourced, and by the operator of the irrigation scheme through which it is distributed to the irrigator's farm. As will be seen, a variety of sources of water accompany the 'central' right to water in irrigation schemes in western NSW.

Water resources management legislation is administered by the NSW Department of Land and Water Conservation (the Department),[2] which issues water rights under licences, permits and agreements, and also determines the operation of the headwater storage dams and river flow to service the needs of the river and of consumptive users to points where the irrigators' divert "their" water onto their properties.

1.2 The situation in New South Wales

The legal form of water rights for irrigators in the Irrigation Areas and Districts of NSW differed from those of other water users. For irrigators and other types of water use supplied through Irrigation Areas and Districts, there was formerly a statutory right to water, termed a *water right*, which was created under either the *Irrigation Act, 1912*, in the Irrigation Areas or the *Water Act, 1912,* in the Irrigation Districts and other irrigation statutes. The volume of water received under this right was limited. Other water was supplied by the Department under a volumetric allocation scheme or by allowing them to take water from high river flow from time to time. Water users outside the Irrigation Areas and Districts did not have the statutory water rights, but received water through a water licence issued under the *Water Act, 1912*.

Thus, the Department in numerous ways shaped the availability of water to irrigators, in respect of volumes and timing, whether daily, seasonal or from year to year. Before irrigation scheme privatisation, the Department controlled and managed the supply of water from the dam (which may be several hundred kilometres upstream of the irrigation offtake structure) to the farm gate, including the irrigation distribution channel system. After privatisation, that physical control stopped at the point of the river offtake and the irrigation company now distributes the water to individual farms.

[2] For the sake of simplicity, references to the Department of Land and Water Conservation (the Department) apply also to its predecessor agencies, which were: the Water Conservation and Irrigation Commission (1912-1976), the Water Resources Commission (1976-1986) and the Department of Water Resources (1987-1995).

The period under discussion commenced in the early 1990s and continued to the year 2000, when the last irrigation scheme but one[3] was fully privatised.

2. Background to Irrigation Privatisation

2.1 Water Rights

Water rights in eastern Australia, including New South Wales, arose in their present form at the end of the 19th century as a result of the failure of the common law to provide adequately for water use and water development in Australian conditions, where the riparian doctrine did not allow orderly development along extended rivers with variable flow. A royal commission in New South Wales recommended an administrative water allocation system similar to that introduced in Victoria, and the NSW Government subsequently introduced the *NSW Water Rights Act* in 1896. This Act vested the '*right to the use, flow and the control of water*' in the Crown – a far-reaching change. The placement of the right to use and control water in the Crown, as recommended by Lynes, the Royal Commissioner, over-rode the common law rights of riparian land holders to take water flowing past their properties. The *NSW Water Act, 1912*, continuing the vesting in the earlier statute, introduced a system of water licensing and provided for the construction of water supply schemes (dams and irrigation) by the government. The water rights licensing scheme in the Water Act remains in force in respect of its authorisations provisions, although the *NSW Water Management Act, 2000* introduces a new water licensing scheme, which is not yet implemented.

Thus, the vesting of the '*right to the use, flow and the control*' of the water resources of the State in the Crown assigned the powers but more importantly obligations to the government administration to manage the use and control of water resources and, through the licensing system, grant organisations and individuals the right to exploit the use of water, subject to specified conditions. This policy deliberately avoided the experiences of other countries with a prior right policy, where disputation and judicial decisions dictate the management of water rights. The *Water Act, 1912* has given broad discretion to the Department to impose conditions on water licences.

2.2 Irrigation Areas and Districts

The general scheme of water rights was based on water licences (with variations including permits and supplies under agreement), but for irrigators assigned land within the irrigation schemes constructed by the Government, other arrangements applied. Two types of irrigation scheme were developed, namely, Areas and Districts. Irrigation Areas were constructed on Crown Land, resumed by the Government where necessary for that specific purpose and both works and land were fully owned by the State. Land was allocated to would-be irrigators, who received a "water right". At the time a number of social goals drove the process (including the desire for increased inland settlement and the placement of returned soldiers after the First World War). Area-based water rights were introduced for Irrigation Areas under the *Irrigation Act 1912*.

Irrigation areas were relatively closely settled, with small landholdings, designed primarily as "home maintenance" holdings, with intensive irrigation. The 'home maintenance area' restrictions were not lifted until the 1980s. The Area schemes included some drainage works. The first Irrigation Area was the Murrumbidgee

[3] The Lowbidgee Irrigation District, supplied from the lower Murrumbidgee River is not privatised.

Irrigation Area (MIA), which was supplied by Burrinjuck Dam on the Murrumbidgee River. The MIA was completed in 1916.

Irrigation Districts were constructed on private land, and while the works were owned by the State, they were installed on land not owned by the State. Legislation provided the power to enter land and manage the scheme. Area based water rights were introduced for individual landholders in the Irrigation Districts under the *Water Act, 1912*. The Districts contained larger landholdings at the outset, designed for pastoral enterprises, and it was intended only a part of each landholding would be irrigated. Irrigation District landholdings serviced by government owned water supply works were required to retain their drainage on-farm and therefore scheme-wide drainage works were not constructed. The "Partial Area" policy also meant the irrigation practices were scattered and not initially as intensive as is the case today in those areas.

The statutory water right within both Areas and Districts was one foot per acre of irrigable land (3 megalitres per hectare) but with a maximum *entitlement* limit. The entitlement was administratively determined by multiplying the basic right by the assessed irrigable area as endorsed by the Department. The right was later converted to 1 megalitre. Although the Acts allow the Governor to make regulations to prescribe the quantities and the times of supply of water for irrigation to meet the rights on each holding, that has never been done and the number of rights continued to be determined administratively.

Over time, the pressure for farm consolidation and the introduction of irrigated rice caused the Department to increase water entitlements. The statutory right remained unchanged

The *area-based water right* was accompanied by access to *additional water*. Landholders were allowed to take additional quantities of water in accord with stated protocols. The statutory right and the availability of access to additional water formed the basis for water charges Additional water applied to Irrigation Areas and Irrigation Districts.

In the1960s, the Department embarked on the conversion of the water rights with additional water to a volumetric allocation system. Volumetric allocations became necessary in the NSW Murray Irrigation Districts in the 1960s because irrigation had intensified with the expansion of rice growing, farm consolidation, sub-division and closer settlement. The volumetric allocation policy, introduced in 1967, shared water among rights holders, by assigning a volumetric entitlement to each holding. The entitlement for each holding was determined in each District using a determined formula which brought climatic zones, soil types and history of use into account.

Irrigation-induced salinity was becoming a serious problem in the Murray valley as a result of intensified irrigation. This led belatedly to the construction of drainage works. Thus, by the 1990s, Irrigation Areas and Districts were being managed in a similar manner and their water entitlements were also similar in-principle. Land ownership remained one of the major differences.

At the time of privatisation, NSW had 18 Irrigation Areas and Districts operated as 7 irrigation schemes (combined Areas and Districts form a single scheme as in Berriquin in the Murray valley). By 1994, these schemes ranged in age from 30 to 80 years, serviced over 400,000 hectares of irrigated land (about 50% of the State's irrigation usage) through works that would cost over $1billion to rebuild. They supplied some 6,500 farms, covering about 2% of the State's area and producing over $700 million annually from agricultural products.

3. The Policy Setting

While a number of policy trends were pushing towards privatisation for irrigation, they fall into two major categories: (a) economic policy and (b) environmental policy. Social aspects of privatisation were handled as part of the negotiation process. Social goals were not prominent in the decision of the Government of NSW to initiate the privatisation program. It is true that some significant social elements were involved, in particular the move to local autonomy.

3.1 Economic policy

A major factor influencing the NSW Government was its ongoing financial obligation and the risks attached to ownership of the schemes. A once-for-all payout was seen as preferable to open-ended financial responsibility. Whereas the philosophy that government should support such schemes would have prevented their hand-over in the past, that view was weakened by the general political ethos of divesting government businesses.

A national initiative to apply competition policy and associated economic policies to the water sector resulted in agreements signed by all Australian governments as the Council of Australian Governments (COAG). The first was signed in February 1994 and the second in April 1995. Significantly, the second agreement contained a clause in which the Commonwealth Government, in return for progress in implementing the agreement, would pay substantial sums of money to States and Territories. The money was to be paid in *tranches,* at times stated in a schedule to the agreement, and as verified by a national audit organisation (the National Competition Council).

One policy plank in the COAG agreements was the requirement that water supply organisations of governments be considered for privatisation or commercialisation. State and Territory governments generally reviewed and acted on their urban water utilities first, but later turned attention to their 'rural' water supply businesses. Important requirements in the 1995 COAG agreement relevant to the management of the irrigation schemes were: -

1) ***Rural water supply*** -

   (i) to progressively review charges and costs and where charges do not currently fully recover the costs of supplying water to users, agree that no later than 2001, they comply with the principle of full-cost recovery with any subsidies made transparent;

   (ii) to achieve positive real rates of return on the written-down replacement costs of assets in rural water supply by 2001, wherever practicable;

2) ***Institutional reform:-***

   (i) to develop administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management and to the adoption of an integrated catchment management approach to water resource management;

   (ii) to apply the principle that, as far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision be separated institutionally;

   (iii) to put in place mechanisms to deliver water services as efficiently as possible;

   (iv) to institute arrangements for service delivery organisations, in particular in metropolitan and other urban areas, to have a commercial focus, and whether achieved by contracting-out, corporatised entities or privatised bodies, each jurisdiction to determine such arrangements in the light of its own circumstances; and

(v) to transfer to ***constituents a greater degree of responsibility in the management of irrigation areas***, for example, through operational responsibility being devolved to local bodies, subject to appropriate regulatory frameworks being established.

3.2 Environmental Policy and Water Resources Management

Privatisation of irrigation was driven chiefly by economic objectives. As it proceeded, however, the attention of irrigators was drawn to potential changes in water allocation policy and the environment.

The concept and consequences of *over-allocation* of water began to be raised by the Department in the early 1990s, but measures to alter the situation were not imposed until later. Around this time serious consideration of policy on environmental flow and water for the environment was articulated in NSW. Prior to that time, the allocation of water from regulated rivers for environmental purposes had been implemented in isolated cases (the Macquarie Marshes allocation dated to the mid 1960s and the concept of water quality flow for South Australia's benefit in the River Murray was incorporated in the inter-state agreement much earlier).

Around the time the privatisation program was being developed, the environment was beginning to receive more general attention. The Department was working (some might say belatedly) to obtain explicit recognition by water users of the need for *downstream flow* from the western rivers in NSW into the Barwon-Darling or Murray Rivers. In 1994, the NSW Government published a State Rivers and Estuaries policy which drew attention to the need for instream flows and wetland water requirements.

When the Government started to articulate specific intentions to set aside water for the environment, irrigators began to see that their access to water could be restricted or reduced in the future. This aroused a powerful interest to have their water rights made more legally secure than before and they began to argue for *property rights* in water.

4. The privatisation process

The process of moving the irrigation schemes to irrigator control began in the late 1980's with the statutory establishment of irrigator-representative Irrigation Management Boards and progressively giving them de facto control of their irrigation schemes. These boards oversaw the progressive separation of the local irrigation business undertakings. Separation of functions, personnel and business premises had been achieved prior to legal separation, with the boards exercising de facto control over the operations and activities of their schemes.

However, the government employed the staff, signed the contracts, reported on the business to Parliament and sued or was sued for scheme disputes. Complete separation became an issue for government of appropriate risk transference to match the irrigators' de facto control.

Complete separation became an issue for a number of the Irrigation Management Boards, which believed their water prices would increase if the schemes remained government owned, because of government's moves to adopt net present value and performance comparison accounting treatments to asset valuation, to introduce a tax equivalent regime and commercial dividend policy for government trading enterprises and to require a financial accommodation levy representing their competitive advantage over private sector businesses. The proximity of a State election was also an influence on irrigators minds because of the then Labor Opposition's position on privatisation.

4.1 Government objectives and policies

Having decided to pursue this course of action, the Government adopted an approach, which can be described under a number of principles:

- ***No reduction in the role of government in its regulatory roles***:

  Government discretionary powers, under the various water management Acts, were not to be diminished, so that environmental and social outcomes would be maintained. Some elements were assured by external regulation (water and discharge licences, and land and water management plans) while others were established through 'internal' mechanisms (eg by writing irrigator's rights into the Articles of Association of the corporations at the outset).

- ***Rationalise its investments in the publicly owned irrigation businesses:***

  The Government wanted to cap its future investment in irrigation infrastructure rehabilitation and renewal, to reduce its exposure to future financial risk.

- ***Government to remove itself from the day-to-day provision of water supply services to Areas' and Districts' irrigators***

  It would be the new company's responsibility to service the individual water users. This would involve delivery of water supply services, drainage, flood protection and salinity reduction measures, including maintaining irrigation scheme assets and the recovery of costs for that business.

- ***Ensure the long-term sustainability of the irrigation enterprises***

  Because of the importance of the irrigation enterprises to the regional and national economy, there had to be mechanisms to assist in the maintaining their longer-term sustainability. It would have been a political disaster if the irrigation schemes had failed and the Government was later compelled to take them back. The government aimed to achieve this objective through the financial terms for hand-over, but also some elements in the associated Land and Water Management Plan (LWMP) which committed the Government to a long-term funding program. The water license therefore included a condition that required, for the larger schemes, the irrigation communities with the assistance of the government and the irrigation corporation had to develop and implement a Land and Water Management Plan to the Government's satisfaction.

In accomplishing these objectives, one practical goal, in relation to water rights, was to keep the regulatory regime as simple as possible. This was accomplished through a single interface between the government and the irrigation corporation by issuing *one bulk water licence*. At the same time, the government wished to ensure that the requirements of all relevant public authorities would be met in the same way as for any other company.

Privatisation of the Areas and the Districts was designed so that existing water management practices continued without disruption. The operations to be undertaken by the new company were considered by the Government to be a continuation of previous operations. One controversial aspect was the provision in the *Irrigation Corporations Act 1994,* which exempted each of the Water Management Works Licenses, when first issued, from requiring an environmental impact assessment under the *Environmental Planning and Assessment Act, 1979*.[4] Although the environmental movement maintained its stance of seeking an

[4] The issue of the license constituted an activity under that Act and would therefore require an environmental impact assessment, whether on not any change to infrastructure or operating procedures was involved.

assessment at the initial issue of the license, the Act gave it an exemption but provided for an assessment, if necessary at the first renewal for the extension of the license after 15 years. This is an added incentive for the irrigation companies to adequately implement their LWMPs.[5]

4.2 Structure of privatisation arrangements

The general scheme for privatisation devised for the irrigation schemes, to satisfy the objectives of the Government and irrigators was:

- special legislation, the *Irrigation Corporations Act, 1994*, which enabled Irrigation Areas and Districts to convert to irrigation corporations and then become irrigation companies
- companies to be cooperative enterprises in which all water users serviced by the company had shares, but also to be fully subject to Corporations Law of Australia;6
- The issue by the NSW Government:- of a Water Management Works Licence, which authorised the corporation or company -
  - (a) to manage and operate the physical works for water supply and associated functions,
  - (b) to receive and be supplied with a bulk volume of water on behalf of the irrigators;
- The requirement that a Land and Water Management Plan be developed for each larger scale scheme, under which the Government and corporation agreed to a program of works, to which the Government contributes funds over a 15 year period, and under which the corporation had specified obligations in relation to its management of the scheme and the environment for 30years;
- The development of the corporation's Articles Of Association under principles established at the outset, in which the rights of irrigator shareholders were stated, for their protection;[7]
- Some special powers transferred to the corporations from the Government in particular the right to enter land for the purposes of operating the works of the corporation;
- The requirement that corporations enter into a water supply contract with every person holding a registered water entitlement, which was to be indicated on the Water Management Works Licence.

All water rights were then formally vested in the irrigation corporation or company.

As a number of the Areas and Districts had drainage works to return water to natural rivers and creeks, the right to return drainage flows, "rain rejections" or local runoff required the formal assignment of that right by the Environment Protection Authority,

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[5] When the bulk water licences come up for renewal after the first 15 year period, the environmental performance of the companies will be relevant to renewal of the licence.

[6] The two-step model from corporation to company was designed chiefly for taxation reasons and in most cases the time from corporatisation to privatisation was very short. Taxation though remain an issue

[7] The legislation required the Minister to be satisfied that water users had been offered shares and water supply agreements in the same proportion as their water rights and entitlements, before he could approve the move of irrigation corporations to private ownership.

which issued a licence to pollute (discharge licence). One condition in the water supply licence was that the company must have approval to return water to rivers, so that the two regulatory instruments had to be compatible.

4.3 The interests of water users

Irrigators insisted on maintaining their existing rights and were adamant that **no irrigator would be worse off** in terms of either their basic water entitlement or the conditions relating to that entitlement, when compared to their rights under government management. They accepted the bulk water licence proposal developed by the Government, but they wished individual water users' entitlements to be recognised. In the negotiations irrigators, through their representatives, raised considerable concern about the possibility of future failure of the new water companies and the potential loss of their water rights. This was fired to some degree by experience earlier in the 1900s of the failure of Water Trusts, especially on the Murray and Murrumbidgee. The irrigators sought and obtained agreement to schedules attached to the water management works licenses, which would contain the details of the rights of each individual water rights holder, as they stood with the Department at the date of privatisation.

As to the management of the corporations, irrigators did not want a board appointed by the Government but one appointed by the irrigators "to give them authority over their own destiny". They lobbied government continually on this issue and won the day.

4.4 The privatisation process

The privatisation process took place over a 5 to 6 year period, except for two schemes (Murrumbidgee Irrigation and Coleambally Irrigation), and within that period of time a large number of issues were negotiated. The privatisation of the Irrigation Areas and Districts was not a "Sale" of the businesses but a transfer of management responsibilities, assets, staff, and intellectual property to an autonomous company to be run by the water users and not by government agencies.

The Government made a number of institutional arrangements to provide the forums for negotiation, namely:

- ***Irrigation Management Boards***

One of the first political decisions made after the Government decided to proceed with its reform policies for irrigation management in NSW, was taken by the then Minister for Water Resources, to establish formal Irrigation Management Boards in each of the relevant areas, created under Section 17 of the Water Administration Act, 1986, but without statutory powers. An objective was to provide irrigators with wider experience in the management of large-scale water delivery and asset management enterprises, through involvement with the Department. Naturally, the Irrigation Management Boards soon wished to take greater control and to avoid the public sector constraints, which applied to the management of these 'commercial' activities through the Department. The Department held the accountability reins but the Irrigation Management Board drove many decisions.

- ***Implementation steering committee***

The Minister established a committee to bring together under an independent Chair, all the Irrigation Management Board Chairs and the senior management of the then Department of Water Resources. Its objectives were to advance issues, seen by the Irrigation management Boards or the Department, as blockages to the advancement

of the policies to achieve autonomy of management for the Irrigation Areas and Districts

- ***Cabinet advisory irrigation reform steering committee***

This was established to give a "whole of government" approach to the policy implementation and the representatives advised their Ministers of the discussions and decisions. It played a significant role in finalisation of the negotiations. It established working groups to address specific issues and engaged consultants to provide expert advise on key issues. Any major decision had to be endorsed by this committee, including the Water Management Works Licenses.

4.5 Negotiations with the irrigators

The decision to proceed to a private corporation had to have stakeholders' endorsement, under a requirement set by the Minister. This policy meant each of the Irrigation Management Boards had to conduct a plebiscite of all the water users within the areas to be serviced by the proposed private company.

The plebiscite question sought only one response – in favour or not in favour of privatisation. However, the plebiscite papers outlined the conditions for the privatisation. Questions relating to water users' rights had to be resolved before the plebiscite and answers included in the plebiscite papers, so there was an opportunity for the irrigators to reject the water rights policies but that would have meant rejection of privatisation also.

There were different attitudes in each of the Boards to the timing of the privatisation and this led to a staggered outcome. The Irrigation Management Boards for the Murray, Jemalong and Lower Murray areas and districts strongly advocated privatisation from the onset to their constituencies and worked hard to achieve that outcome. They were the first Boards to negotiate through the full processes from the operating license, the funding package, staff transfers, vesting of assets and identification of the roles of the company and the government agencies. Their desire to achieve autonomy was driven by the proximity of the State election and their fear that a change of government might prevent full privatisation

Irrigators in the Coleambally Irrigation Area and the Murrumbidgee Irrigation Areas and Districts for various reasons, did not move to privatisation with the same enthusiasm. Coleambally irrigators did not like the loss of a direct statutory guarantee of water rights and needed further time to asses its implications. They also preferred a two-tiered co-operative structure and wanted the opportunity to convince the Government of its benefits. The Murrumbidgee Irrigation Areas and Districts irrigators did not like the requirement, that it should implement the irrigation community's Land and Water Management Plan. Both schemes also considered that, given more time in developing their asset condition profiles, they could justify increased asset refurbishment funding from government. Both schemes had also obtained negotiating parameters from their constituencies and could not move beyond those limits, without taking further instructions, which time did not permit.

The five major irrigation schemes were converted under new special purpose legislation, the *Irrigation Corporations Act, 1994*. Using this legislation, each scheme was firstly corporatised, then privatised. The corporatisation phase for three of the schemes lasted a week, for one scheme it lasted a year and for the other lasted two years. Murray, Western Murray (Lower Murray Irrigation Areas) and Jemalong were privatised in 1995, Murrumbidgee was privatised in 1999 and Coleambally in 2000.

The *Irrigation Corporations Act, 1994*, provided for a Water Management Works Licence to be issued, which identified all the significant works controlled and operated by an irrigation corporation: surface water and groundwater supply works,

drainage works, interception works and flood control works; bores, pumps, regulators, channels, evaporation basins, levees, bridges and culverts. The Government took the opportunity to redefine the responsibilities of the department and the private company more clearly than under public control, for when the irrigation schemes were administered by a government department, exercising broad discretionary powers under the general direction of a Minister, many responsibilities had been undefined

The Water Management Works Licence specifies conditions of use of the works, monitoring and reporting and requires the irrigation corporation to implement the Land and Water Management Plan for the irrigation scheme area.

Each corporation received from government, an assistance package to ensure the works identified in the Operating License and /or in the Water Management and Works Licenses could be rehabilitated to acceptable levels of operating condition. The assistance was by way of provision of government funded works (in the case of the minor schemes and Lower Murray) or for the larger schemes, a government financial package to renew and rehabilitate run-down water supply and drainage works over a 15-year period. The corporations were given the responsibility of undertaking these works. The government exercised its financial auditing responsibilities on the expenditure of the funds by the corporations on their asset management programs, by audits of the works activities and accounts by an independent consultant.

4.6 Land and water management plans

Land and Water Management Plans were designed to effect the long-term sustainability of irrigation by improving irrigation management practices, addressing the harmful impacts created by and the past management policies pertaining to irrigation and monitoring the impacts of scheme. They also contain measures for environmental improvement and benchmarks for environmental performance. The plans were essentially a form of agreement between the government and the companies, and were acknowledged by landholder representatives. The companies had to use their constitution provisions and water supply agreements to ensure that landholders (who were responsible for on-farm measures) honoured the objectives in the plans.

The asset hand-over agreements, in which the Government agreed to raise asset standards to negotiated levels, were relevant to LWMPs, which ensured that the implementation of asset upgrades achieved or were consistent with the environmental objectives of the plans.

The implementation of the plans was one of the main compliance conditions for the companies. If implementation was not in accord with the agreements, then sanctions could be applied to the company through the licence. Whilst the threat of sanctions exists, it is considered unlikely to be imposed, without a serious breach of a plan. A negotiated outcome is more likely.

5. Irrigation water rights before privatisation

An Irrigator, receiving a supply of water in the Irrigation Areas and Districts, did not hold a water licences or permits, which defined the water to which they were entitled. By virtue of their status as irrigators with landholdings within the schemes, they had a statutory right of one megalitre each, as provided in the *Water Act 1912* or the *Irrigation Act 1912*.

In the Irrigation Areas (not the Districts), the number of water rights, attached to a landholding, were determined administratively by reference to the ability of a landholder to support a family, given the production capacity of the landholding and the area capable of being supplied by gravity-fed water channels. The Department would allocate a division of the rights attached to a landholding being subdivided using similar criteria. Allied to this basic statutory right was an obligation on the Department to supply them with water from the relevant headwater dams and by operation of the relevant river works to regulate flows, when such water was available. There was no guarantee of supply.

These formal legal entitlements did not define the water that an irrigator could reasonably expect in any year or season. That was determined by the Department administratively. The long term arrangement, whereby the Department, by its own administrative and technically-based decision processes, supplied irrigators according to the volumetric allocation scheme, took on the perception (and it might be claimed by the irrigators the reality) of a water right. The Department's operational and water accounting methodology formed the basis of this *right*. Irrigators had a good case to argue that they had been given undertakings, amounting to a water right, that they would receive water on the same consistent basis in the future. The same held, to a lesser degree, for *off-allocation* water, which the Department allowed to be taken opportunistically, but charged irrigators in the same was as for their *on-allocation* (from the dam) water.

The government was not obliged to deliver water rights in times of actual or threatened water shortage or when the landholding was poorly prepared for irrigation, inadequately laid out or maintained, or when water charges were overdue.

Volumetric allocation schemes were administrative determinations that reflected the policies for the time, being a mechanism to share the consumptive water available for an irrigation scheme in any particular year. They provided a numerically indicative additional allocation related to the statutory water rights. Different approaches were taken for different irrigation schemes, with some allocating more water to horticulture and others using different multipliers per water right for different irrigation areas and districts.

Irrigators perceived that both water rights and volumetric allocations were 'guaranteed'. However, the water rights could be removed by the Government, without compensation, either by dissolving the Irrigation Areas or by repealing the relevant legislation. The rights could also be removed with compensation by resuming them or the landholdings to which they were attached.

Volumes of water supplied under the volumetric schemes were termed *allocations* and could be removed more simply, by altering the policy, as they were administratively determined. The volume assigned to each land holding was known, but in each year, the Department decided whether all or only part of that volume would be available and supplied from the dam via the river. The technical rules by which the available water each year was calculated, were for many years considered to be an engineering-based decision within the Department and the "rank-and-file" irrigators, holding water rights and entitlements, had little idea how their annual

allocations were decided. In the early 1970s, River Management Committees and in the early 1980s River Management Boards were established to improve relationships and to inform the irrigators of policies and management protocols. These were composed mainly of water user representatives with the Department began to brief the members on river operation policy and some technical issues. Irrigator representatives began to attain some knowledge of operational and accounting methods used by the Department.

To summarise, immediately before privatisation, the water to which irrigators in the irrigation schemes were entitled was held in the following ways:

- a statutory right of 1 megalitre per year which must be supplied by Department,
- the entitlement to a volumetric allocation of water allotted to the relevant area in the Irrigation Area or District;
- the entitlement to the water supplied under the volumetric allocation scheme for the river in question (as provided in the *Irrigation Act 1912* and the *Water Act 1912*) respectively, the volumes available in any year as determined by the Department according to demand and availability of water in storage;
- an administrative arrangement for only authorised water users to access to higher flows in the form of 'off-allocation' water (ie not accounted against the volumetric entitlement if taken), as determined by the Department, which based its decision on the assessed volumes of water on a flow event basis.

The volumetric allocation schemes, combined with the Department's policies on priority of supply gave rise to two distinct classes of water supply known as *general security*, meaning water users supplied in most years but restricted when water shortage occurred in drier times and *high security*, meaning water users whose supply was better guaranteed and which the Department attempted to provide even through the worst drought. These included towns water and supply for permanent plantings such as orchards.

The volume of water from the dam to which each irrigator was entitled was known as 'on-allocation'. Water diverted was subtracted from the allocation volume. The actual volume available to each irrigator at the start of the water year depended on the percentage announced by the Department, based on its assessment of demand, availability and the supply security policy for the following year. Thus, if 80% was announced, irrigators could easily translate that percentage into the percentage of their own volume. As the season progressed, the announced percentage might be increased by the Department, following inflow of water to the dams.

Irrigators became used to this system, where the end of season allocation might be considerably higher than the start, and made irrigation planting decisions according to their estimate of risk. Many took the risk on expectation in most seasons there would be increased water allocations.

The Department also allowed high flow events to be diverted as 'off-allocation' water, by licensed water users along the river or by water users in the Irrigation Areas and Districts, under an approved sharing protocol. Off allocation water, was opportunistic use of water but could be taken without being subtracted from the volume accounted against the irrigators as water which they entitled to divert under the volumetric allocation scheme. This accounting protocol applied only while the *off-allocation* event was in progress and access to it was announced by the Department. This source of water was highly significant in some rivers, but was the least predictable.

6. Development of the bulk water licences

6.1 Major policy decisions

Policy decisions had to be made concerning the form of water right to be allocated to the irrigators in the privatised irrigation schemes. Issues were:

- should the rights continue to be assigned to irrigators as individuals or to each scheme on a grouped basis?
- in what way should the bundle of rights and water expectations be expressed and how should they be converted?
- with what should they be associated?

Decisions were made in the context of irrigators' demand for '*greater certainty of water access rights*', in part spurred on by the uncertainty created by the potential for changes to water management and environmental policy and in part created by a increased awareness of legal rights issues, as a result of exposure under the privatisation process. Irrigators became more acutely aware of legal and financial risks, when considering the options for privatisation.

The *Irrigation Corporations Act, 1994*, introduced the Water Management Works Licence, as the mechanism for transferring water rights to the privatised schemes. The licence authorised the irrigation corporation or company to use all the works of the scheme to provide water supply services for purposes as specified on the License. Because of the variety of irrigation enterprises pursued, the definitions of water use had to be somewhat generic. This decision by government, effectively turned the management of the works over to the new management.

It was decided also the water rights would be assigned to the company, not individuals. This was consistent with the intention to give the companies complete control over the management of the water, once it had been diverted from the rivers.. It was also administratively simple – one licence replaced numerous water rights and entitlements.

Water Management Works Licences were issued for periods up to 15[8] years and contained:

- ***a volume based right to access water***, determined as the total of the individual entitlement rights of the relevant water users, as well as some adjoining users serviced from the Department's water delivery and drainage works, plus a provision for losses where that was applicable;
- ***identification of the works*** involved for the company to take water from the relevant source;
- ***specification of the purposes of water use***.

Even with the extended tenure, the companies have to report on performance and the Department audits this as well. An issue is whether the degree of auditing by the Department is adequate.

The removal of water rights from individual irrigators and other water users and the vesting of those rights in the company was a significant change. There had to be a

[8] At the time of the privatisation, the tenure of a Part 2 Surface Water License was generally 5 years. The irrigation management boards sought and obtained a longer tenure. Initially the claim of the Murray board was for a license in perpetuity but this came back to 25 years. The Government was not prepared to go beyond 15 years.

compensatory mechanism whereby the irrigator was assured of a continuing right to receive the water. This was catered for in two ways:

- by identifying and scheduling the water rights of the individual holders in the water management works licence;
- assigning shares in the companies to match those rights and the registering of the entitlements by the companies.

In some cases, the company was required to supply water to towns (Griffith and Leeton being the largest) and in those cases the licence stipulated that the town supply had priority and provided for future growth in the town's water entitlement.

6.2 Factors Considered in Conversion

The conversion of the rights to the new form required consideration of a number of factors. The water had to be quantified and the relationship of rights within the scheme to external water policies and rights clarified. The existing volumetric entitlements, as determined through the policy decisions of 1967 and 1976, were the basis of the bulk water rights for all irrigation corporations, with subsequent modifications, that had taken place through water transfers.

The volumetric criteria for existing rights were accumulated for the water management works licences, and other considerations included:

- in some areas volumetric criteria had never been assigned, for instance in the Lower Murray irrigation area. In that case, they were made equivalent to those of adjoining river pumpers;[9]
- An allowance was made, over and above the accumulated entitlements of water users, for water lost in transit from the river to farms while travelling through the scheme. However, no loss factor was given to schemes, which were piped rather than having open channels (Lower Murray);
- in some cases (for instance, the Murrumbidgee Irrigation Areas), the bulk allocation was based on the volumes needed to meet all the individual volumetric entitlements, taking into account re-use of drainage water within the scheme under existing management procedures: thus the bulk licence volume was less than the sum total of the individual allocations;
- In one case, (Murray Irrigation) the transmission loss allowance was to be reduced and has since been reduced by 30,000 megalitres, on the basis that as the government funded a program to reduce seepage, it was entitled to a share of the savings.

A number of general approaches were taken to the development of the licences, as follows -

Transmission losses within the schemes

Transmission losses from the river to the farm outlet were defined as a combination of fixed and variable components. The variable component was related to the allocation level available in each season. Both components were estimated by a combined analysis of recorded data and hydrologic estimates.

[9] Although the records showed use to be less than the river pumpers were entitled to, the Lower Murray irrigators argued that if they had been converted to a volumetric scheme in the 1970s, they would have had the same. This argument was accepted by the Government.

Rights of water users within the Irrigation Areas and Districts

When water entitlements were converted, each landholder, as a shareholder in the corporation, was assigned a number of shares equivalent to the number of megalitres in their prior volumetric entitlements held with the Department. The Irrigation Corporations registered these rights, defined as "water entitlements". Modifications to the rights require approval of the Board and then adjustment to the Register.

Transfer of the water delivery assets

In the Water Management Works License, the works to be transferred were referenced. In such transfer, the main works to extract or divert water were often significant installations or structures. The vesting arrangements varied in relation to these specific works. Some of the companies were vested the works while in other cases these remained with the Government. Jemalong did not take the off-take regulator, which controls inflow to the Jemalong irrigators. The company does however meet the operational and maintenance costs of the regulator as managed by the Department.

6.3. Third parties and special arrangements

Privatising NSW Irrigation Areas and Districts required the water rights of other parties to be considered.

After the initial establishment of the schemes, as early as the 1920s, water supplies from either the government's water supply channels or drainage works were permitted to new irrigators under separate agreements (in effect, under contract). These agreements mostly related to the irrigation of land by landholders wishing to pump water to land that could not be gravity-fed from the government channels. In the privatisation in the 1990s, these contracts needed to be maintained with the irrigation companies by making those landholders shareholders.

The Government ensured they were issued with at least one share in the company, to allow them to become members and require their contracts to be maintained. Some water supplied under agreement included specific provisions as to area or volume to be supplied. These were included in the irrigation corporation or company on an equivalent to those who had rights and allocations within the scheme.

Several natural drainage lines (usually high level flood-running watercourses) experienced flows greater than would have occurred in natural conditions, due to their connection to the irrigation scheme's drainage lines. Ordinary river pumping irrigation licences were granted to occupiers of land along these watercourses and all the occupiers of riparian lands along these watercourses enjoyed the availability of more water for stock and domestic needs, as a riparian right. Both these rights gave an opportunity to take water, which happened to pass the point of offtake. The continuation of flow at the same frequency could not be guaranteed if these occupiers of the lands, whether with a licensed or a riparian right, were not members of the irrigation schemes whose continued drainage flows were providing them with benefits.

The Government resolved their situation by the artificial mechanism of including the watercourses, downstream of the irrigation company's boundary, as a work of the irrigation company, which then allowed the occupiers of the riparian lands to obtain a contract for water supply from the company.

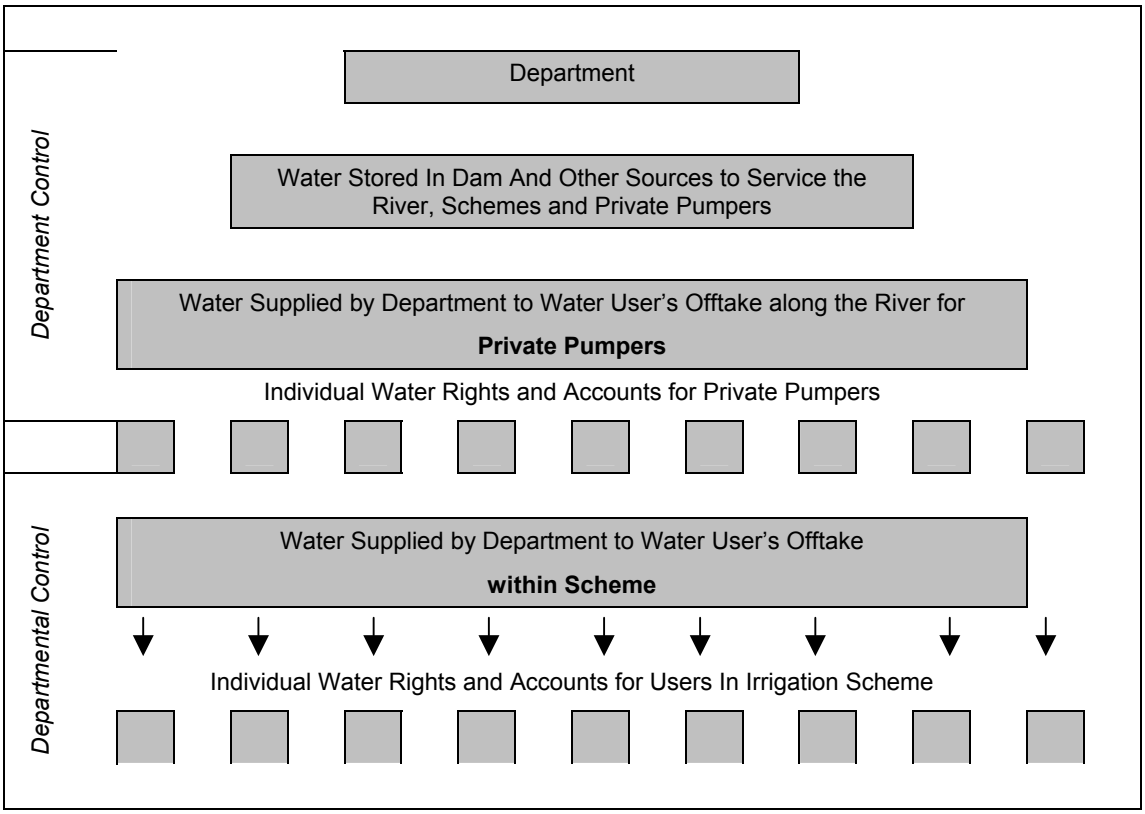
Some towns are situated within irrigation areas. Two major urban centres, Leeton and Griffith are located within the Murrumbidgee Irrigation Areas and receive most of their water supply, and dispose of most of their excess drainage, now through

Murrumbidgee Irrigation's works. They were handled differently from irrigation water users. Their allocation was assessed with a negotiated factor for future growth. This was a once-only calculation. The towns are expected to purchase additional rights if their demand increases in the future beyond their negotiated growth allowance These centres are now shareholders and hold water supply contracts from the privatised irrigation corporation.

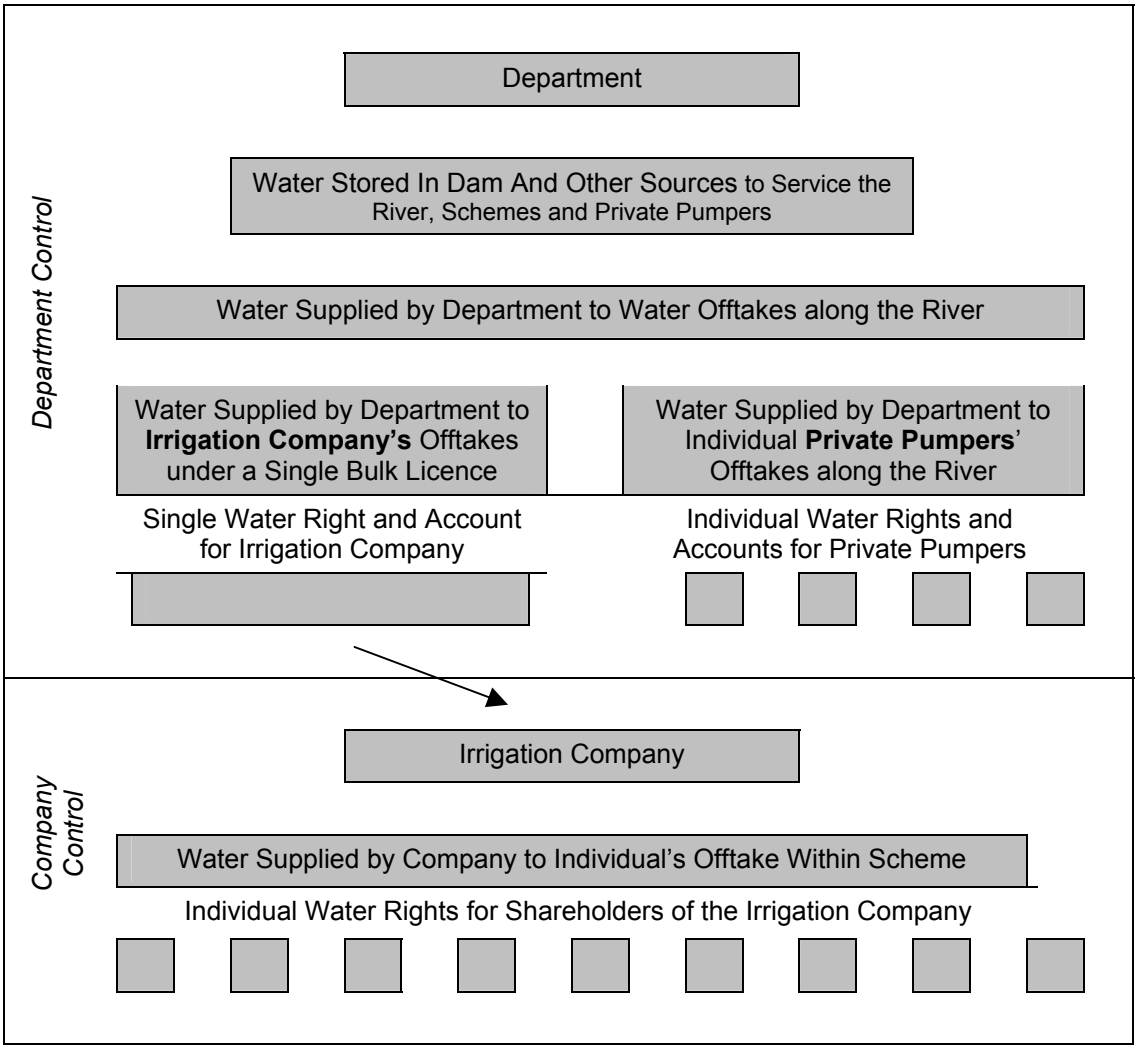
As part of the negotiation of the *Water Management Act 2000,* the Government adopted a policy, which does not require towns or cities to obtain water from the water transfer market to meet their essential domestic growth needs. The towns and cities will be assigned additional water, with other users having their security levels decreased, albeit by only small amounts. However, because the earlier arrangement had been settled for irrigation scheme towns, the recent announcement does not apply to them.

FIGURE 1: WATER RIGHTS BEFORE AND AFTER PRIVATISATION

Before Privatisation



After Privatisation



7. Definition of rights of irrigators within the schemes

7.1 Protection of individuals' water rights

The rights to water of irrigators and some other water users (including some towns) within the corporatised and privatised irrigation schemes involve a relationship with the management of the scheme as well as a right to be supplied with certain water. As the foregoing discussion illustrates, mechanisms were created for both purposes: corporations legislation, operating licences, company structure and articles, and the issue of shares in the company were intended to give water users, as shareholders, a right to a say in how their water supply was managed. At the same time, the bulk water allocation in the Water Management Works Licence, and the water supply contract with water users, were created to ensure that they received the water to which they were entitled prior to privatisation. These mechanisms are linked and cannot be completely separated.

The debate on protection of irrigators' interests was satisfied to a degree by the fact the Water Management Works Licences were issued under a statute. Once the works licence was issued, the corporation or company controlled the water and the water rights. The intention was the company would have freedom over the control of the works, subject only to the wishes of the irrigators, as shareholders, having the ability to intervene periodically.

However, company control over the part of its water rights, which was attributable to each water user, had to be limited so that the company was unable to interfere with it or modify it without the consent of the water user. The company has the relatively unfettered right, in relation to the disposal of water, to:

- offer water users a contract for water supply with terms and conditions as determined by the company,[10]
- determine the operational rules and practices for distributing water within the scheme from the physical diversion point (the river) to the individual user's property,
- apply rules governing the priority with which users will be supplied via its channel or pipe scheme, but subject to any priorities identified in the Water Management Works Licence,[11]
- administer an accounting system which identifies each water users' use and entitlement in the scheme,
- apply rules for water ordering and supply and penalties for breach of the rules,
- determine rules for water transfers within the scheme and between the scheme and other water users (such rules are likely to constrain rather than ease transfers),
- determine the costs of its operation and recover those costs from water users.

The conditions for modification of the rights of the water users serviced by the companies were defined in their Articles of Association combined with water supply contracts. A number of the companies have applied constraints on the modification of the rights, especially in relation to transfers. The companies' policies should be driven by the objective of maintaining a financially viable business. In most cases water could be transferred internally among shareholders and into the schemes but not out of the schemes.

One interesting contrast between the earlier *paternalistic* arrangement of government control and the new *local autonomy* model is that the irrigation companies are in fact capable of taking a harder line with water users on water charges and compliance than the Department was previously capable of achieving. This is because the water users accept firstly that they have a measure of control over the company and its actions (through shareholding), and secondly that the company is exclusively devoted to their interests as both shareholders and recipients of water. Similar attitudes were evident in New Zealand in the early 1990s, where irrigation was privatised earlier than in New South Wales (Cleary et al, 1992).

7.2 Water rights of companies and water users

During the corporatisation phase, statutory water rights were not revoked. The corporation received a bulk licence, which required it to deliver those rights and associated volumetric allocation entitlements. Whatever rights and entitlements irrigators enjoyed were continued except that the traditional supplier's (the

[10] Irrigation companies are in fact, required to enter into contractual arrangements with water users, by their Articles of Association.

[11] This means that the company may decide how to organise the order of distribution through its channels, considering such matters as how much water is delivered to a particular channel for efficiency reasons, but the company must respect the longer-term priority assigned to users with *high security* entitlements.

Department) delivery obligations retreated to the river (its role being bulk supplier to the river offtake) with the irrigation corporation adopting the delivery obligations from the river offtake to the point of supply. Both the Department and the irrigation corporation were government bodies.

Irrigation corporations in requesting privatisation had to demonstrate to government that the scheme customers were offered water supply contracts and shares in proportion to their water rights and volumetric allocation entitlements. Upon privatisation, the government transferred its shares in the irrigation corporatisation to the customers of the scheme in equal portion to their water rights and volumetric allocation entitlements. (One customer in one scheme chose to reject the transfer of shares, relinquishing participation in the irrigation scheme). At the same time, any water rights and entitlements attaching to the landholdings in the scheme were dissolved.

The government's obligations were restricted then to the bulk supply to the irrigation corporation over 15 years, under a licence with a specified bulk water supply right. This right no longer distinguishes between the statutory water rights and volumetric allocation entitlements.

In many respects, this new right is more secure than those it replaced. However, irrigation corporation licences remain subject to state government policies on water allocation, including the proposed *bulk access regimes* to be introduced through the *Water Management Act, 2000*, and to related existing and future policies such as the Murray Darling Basin "cap" on water extractions, environmental flow regimes and bulk water trading rules.

7.3 Entity constitutions and water supply contracts

The irrigation corporation's obligations were set out in their constitutions and customer contracts. These 'rights' attach to the customer rather than the landholding. The ability to vary them vests (under corporations law/ co-operatives law and contract law) largely with the customers of the irrigation corporation – no longer with the government]. Coleambally Irrigation corporation has become a co-operative, with its constitution being set out in its co-operative rules. The other irrigation corporations are established under Corporations Law, with each constitution being in its Memorandum and Articles Of Association. These constitutions set out member-shareholders equity in the irrigation corporation, their obligations and how the constitution can be altered.

The water supply contracts set out individuals' rights to have water delivered to a landholding, irrigator levies, conditions of usage and the right to buy or sell water allocations within or outside the scheme. The water supply contracts impose obligations on individual landholders. Some obligations relate to the internal management of the irrigation scheme by the company. Others are to enable an irrigation corporation to meet the obligations imposed on it under its water management works licence and pollution control licence. These contracts also reflect an exercise in due diligence by the Board of management of the irrigation corporation.

Individuals can vary the contract by either renegotiating the terms with the Board, or by forcing a policy change by special resolution passed at shareholders' meeting. Some terms may be challengeable through external processes. For example, it is understood that some schemes impose a restriction on selling water entitlements outside a scheme. There may be ways to challenge such a restriction on trade, but no one has challenged the point to date.

And again, in many respects, these new 'rights' are more secure than those they replaced. However, some irrigators were concerned that if their privatised irrigation corporation went into liquidation, its bulk water supply allocation could be sold, thus rendering the corporations unable to honour their water supply contracts with irrigators. The licence requires the irrigation corporation to maintain an up-to-date register of all persons entitled to be supplied and their current 'entitlement'. This will enable the grant of any new licence by the Department to another irrigation corporation over the same scheme, to be subject to the replacement irrigation corporation undertaking to supply according to the register.

8. Before and after comparison

Although the transfer of irrigation scheme works and their operation was the major focus of attention in the privatisation program, considerable effort was required to resolve the transfer of water rights from an individual basis to the new irrigation institutions.

The transfer of water rights made a number of changes. Firstly, the legal scheme, which had been developed over a long period was abandoned and replaced with a simpler equivalent. Statutory 'basic' water rights disappeared and the volumetric allocation formed the basis for calculating the new rights.

Secondly, the water right was distanced from the water user and placed with the irrigation company. On the one hand, the legal form of the water rights was firmer and clearer than before, no longer relying for the greater part of the water on an administrative determination by the Department (in respect of the fixed volumetric element of the right). On the other hand, the water user was assured of the water right in indirect ways:

(a) through the ability to influence the company as a shareholder,

(b) by the constitutions of the companies or co-operatives,

(c) by holding a water supply contract with the company, and

(d) perhaps most importantly in the minds of irrigators and others, the register of entitlements attached to the water management works licence identified the individual entitlement and backed by special legislation – the *Irrigation Corporations Act, 1994*.

Responsibility for transferring the water from the river to the farm or location of use had shifted from a government department to a local body in which the irrigator had shareholding rights. This mean that the irrigator had better opportunities to influence company policy, but the company retained operational and management-related powerful rights over the irrigator's water. These extended to rules on how the water was distributed through the scheme and potentially could affect the timing, rates of flow and volumes locally available to each water user. These are important elements of a water right.

However, the control of the water from the dam to the irrigation scheme's extraction points remained with the traditional operator – the government. The uncertainties associated with changes in government policy on bulk water allocation still apply to the bulk water entitlement in the company licence, in the same way as to all other licensed water users.

The water user's freedom to buy and sell water rights is now governed by the company exclusively within the scheme and by the government's water market rules combined with any further rules or restrictions imposed by the company in respect of water trading into or out of the scheme.

Significant changes have occurred in compliance. Before privatisation, the irrigator dealt with the Department exclusively. Although the Department had penalties at its disposal, these were difficult to apply in the case of water "stealing" for instance, requiring a court judgement to apply before some penalties could be imposed and the penalties under the Act were limited. In other instances, the Department found it politically difficult to act. After privatisation, the "stealing" of water by individual water users is a matter for the company and amounts to a breach of the supply contract. Not only is the compliance and enforcement of water rights simpler for the company to effect through its contractual relationship with the user, but it is also more socially acceptable to the water users as a whole, who now see such breaches as a direct threat to themselves. The same applies to water charges.

Another difference is the degree to which the rights and associated obligations have been specified and are enforced. Firstly the water rights themselves were rationalised and more firmly specified in the course of determining the bulk allocations in the water management works licences. Explicit recognition of system losses and formalisation of previously informally managed arrangements. Secondly, the regulatory regime surrounding the irrigation enterprises was strengthened by

(a) defining obligations with monitored benchmarks in the LWMP, and

(b) issuing a discharge licence for drainage outflows. The environmental impacts of irrigation activity are explicitly written into the Land and Water Management Plan, which is attached to the water licence.

To what extent has the privatisation of irrigation schemes created a form of common property in water? As the foregoing illustrates, water rights under the new regime are something of a hybrid, containing both individual and common elements. While a single water right is issued to each scheme, it retains a record of the individual allocations and is designed to prevent the company from interfering with the relative water rights of individuals. There is also a level of protection of the individuals water rights, if the company were to go "belly-up"

The schemes are operated and managed as common entities, but this was also the case when the Department was in control. The difference is that management is now closer to the water users and they have a greater opportunity to influence it. The perception of the irrigators is that the scheme is theirs and no longer a scheme belonging to government but managed on their behalf. The dynamics that apply to localising decision-making in the irrigation schemes of NSW are equally relevant to irrigation in other situations.

9. Conclusions

Privatisation of irrigation schemes in NSW has had significant role in:

a) requiring closer specification of water rights for irrigators within schemes and better definition of scheme boundaries and the formalising of the water rights of irrigators,

b) altering the balance of decision-making by shifting it from government to water users, as the Board members or as shareholders,

c) requiring the clarification of distinguishable and linked roles of the government in water supply versus definition of water rights/entitlements ie bulk licences versus in-scheme distribution control),

d) strengthening regulation of irrigation and its impacts on the environment,

e) focusing the awareness of users on legal aspects of their rights, since they could no longer assume government under-writing of supply or distribution of water.

A significant institutional change, which alters patterns of responsibility will automatically have an impact on the form of water rights and the practices which determine important elements of the rights, such as cost, timing and frequency of access, flow rates, penalties for misuse and the nature of obligations imposed on the water user.

Privatisation of other types of water utility can also change the relationship of user to water rights (Taylor,2000), since the perspective of the enterprise changes from one where government under-writing of rights is assumed – to one where legal risk is taken more seriously. Similarly, irrigation schemes had been managed since 1916 by the Department and in all that time it was assumed that the government would continue to operate as in the past, without the need for irrigators to have firm legal water rights guarantees. (In fact, they assumed that such guarantees existed in many cases where they did not). When irrigators were compelled to consider the private model, they started to focus on legal certainty and to demand legal guarantees.

However, privatisation did not only raise an awareness of legal issues. The privatisation program clearly illustrates that numerous decision-making processes surround the right to receive water and that the supply of water to an irrigation scheme from a remote dam is a complex matter. The complexity was somewhat hidden from irrigators, so long as the whole supply and issue of rights was embedded in one government agency. Once it began to be separated, irrigators wanted to know how technical decisions were made and on what basis they were receiving more or less water in a given year.

Whether the bulk water entitlement granted to irrigation companies in NSW is a form of common property is open to debate. In the view of the authors, it has some common property elements, but the individual's volume entitlement within the bulk entitlement remains critically important. The devolution of management is a more important element, resulting in greater trust between irrigator and operator and greater irrigator control over the policy decisions of the operator company. To the extent that local management is a feature of common property schemes, the creation of irrigation companies is a move in that direction.

References

D. Cleary and Taylor P. 1992: Report on Tour to New Zealand: Part II, Privatisation of Irrigation. NSW Department of Water Resources, Sydney

Department of Land and Water Conservation (DLWCa). 1998. *Water Access and Use*: *discussion paper* DLWC, Sydney, April.

Department of Land and Water Conservation (DLWCb). White Paper on Water Legislation.

Council of Australian Governments (COAG). 1995. Agreement on water policy.

P. Taylor. 2000. The Evolution of Water Licensing for Utilities in New South Wales. Paper delivered to the third Australasian Conference on Natural Resources and Law, Adelaide, March.

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Government Policy on Management of Water Resources			
• Determining how much water in the river is retained and / or water allocated for the environment	Policies and rules for environmental flow and allocation of water for the environment affect the long-term value of water rights	The Areas and / or Districts were represented generally on the Committees as irrigation industry participants. (This has not yet happened in the Murray, as the MDBC is still developing processes)	Little change due to privatisation and changes to the company status but the nature of representation on committees has been changed under the Water Reform Agenda
• Managing inter-user competition by prioritisation policies (cutting off delivery of water to users in priority order during scarcity)	Differentiation between types of water use rights gives different values to those rights	DLWC had direct control of river operation and annual allocation determination and made allocation and delivery decisions which determined the priority given to supplying water to irrigation schemes	The priority given to irrigation companies is formalised and written into their bulk water licences
• Rules governing access to uncontrolled river flow ('supplementary water' or 'off-allocation water')	'Supplementary water' or 'off-allocation' water may be a significant opportunistic source of water to users, as it is not readily predictable	DLWC controls by determining when all users may have access	No change due to privatisation but access rules have been modified under the Water Reform Agenda
• Apportionment of costs for water resource management charges associated with management of users' water rights	Affects cost of assigning, modifying and protecting users' water rights and their security	No license fees were applicable Costs for protection of rights were included in general bulk water delivery charges –(not separated out, but policy on this charge was transparent.)	Licence fees cover assignment and modification costs of the company's Bulk Water Right with bulk water delivery charges to company containing costs for protection of right Water management charges to irrigation company included in single bulk charge (passed on to irrigators by company)

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Headwork Dam Management and Accounting for Stored Water			
• In-storage water accounting	The accounting methodology directly impacts water users' entitlement annually	Accounted individually to the farm gate. River 'losses' included in each account	Accounted as a single bulk entitlement for each irrigation scheme and all irrigators
• River operation	River loss calculations affect release from dam and account of water diverted	Water Businesses determine losses provisions.	No change
• Water ordering	Rules for how orders are treated and whether the account is reduced if water is not taken	Individual orders given to Department which sums and dam operator makes releases	Orders from individual users in the scheme are given to company, a consolidated single order including an allowance for losses is given to DLWC 's dam operator
• 'Rain rejection'	Accounting for releases from Dam when water from the dam is ordered, released but then not diverted	Individual irrigator's annual entitlement is not debited if water is not diverted.	Company's annual entitlement is not debited if water is not diverted.
• Control of river diversion works	Accountability for control of the diversion of water to scheme to deliver rights to users.	DLWC fully controlled all diversion works and made decisions on diversions	Some diversion works operated by irrigation companies subject to rules given by DLWC to protect other water users downstream.
Financial Responsibility for Headworks (Dams)and River Works			
• Water charges for dam operation	Policies for irrigator charges	Government decides level of charges, with a charge levied against individual irrigators	No change, but charge levied against irrigation company which passes it on to irrigator as a cost. Charges since privatisation subject to independent audit by IPART, as part of NSW Water Reform Agenda

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Water Distribution within Irrigation Schemes			
• Operation of irrigation scheme			
• Distribution of water from river to irrigators	Where water is distributed, the volumes and timing can affect access to individuals	DLWC distributes water according to its own engineering and other criteria	Company distributes water to meet the "contract" arrangements with the shareholders within the
• Inter-user conflict within irrigation scheme	Method for resolution	DLWC (Government) resolves disputes and provides water if necessary	Company resolves disputes
• Compliance with water supply taking rules	There are obligations on both the Department and the holders of the water rights.	DLWC had full responsibility for ensuring water is supplied in accordance with agreed supply levels and water users have to meet the conditions stated on their authority to take and use water.	Company has the total responsibility to manage compliance
• Charges for water distribution	Cost recovery levels dependent on governments policies, which excluded the costs of providing the works in the first place but contained provisions for all operational and maintenance costs and partial recovery for works renewals.	In the transitional period, from 1989 to the date of transfer, the Irrigation Management Boards recommended IA & D charges to the Minister. DLWC (DWR) provided the Minister advice on the IMB recommendations. Tariffs generally had provision for Entitlement and Use Charges	Company determines and imposes water charges and sets tariff structures.
• Priority of supply within scheme	Sectoral priorities affect value of water right or entitlement and delivery rights.	DLWC supplied each irrigator or other water users on the basis of categories of water use such as permanent plantings versus pasture and might restrict supply at times of scarcity	DLWC (or MDBC on the Murray) supplies the company at the point of river diversion and the company applies its own criteria among all users it supplies, limited by contractual arrangements.

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Basis of Water Right and Entitlement			
• Statutory rights	There were no guaranteed entitlement for irrigators within the Areas and Districts other than a basic statutory right of one megalitre per year	Under an administrative decision the irrigators basic rights in the IA&Ds were converted to a volumetric entitlement based on formulae	Statutory basic right of 1 megalitre removed, but company given a bulk water right under a license issued under a statutory provision and individual rights were tied to that right
• Entitlement under volumetric scheme at IA&D's diversion point	Definition of bulk water rights and accountability of meeting losses in IA&D's Delivery systems	. There is no formal right at the diversion point. Losses in taking water from the river to the holdings are met by the DLWC A volume entitlement, as determined by the DLWC, is delivered to each irrigator to meet their notified demands, as water is available,	DLWC supplies water rights to the company at the diversion point, which holds the bulk water licence containing allowances for the rights of the individual shareholders and the delivery losses.– DLWC has no direct contact with irrigator
• Entitlement under volumetric scheme at irrigators' farm boundary		A volume entitlement, as determined by the DLWC, is delivered to each irrigator to meet their notified demands, as water is available,	Irrigator supplied by the irrigation company under contract with that company

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Rules for Management of Water Entitlement within Irrigation Schemes			
• Transfer of water rights within scheme	Rules may restrict where and to whom water may be transferred	Temporary or permanent approved by DLWC in accordance with valley-wide policies	Company sets all policies on transfers and authorises individual actions in accord with its Articles of Association
• Transfer of water rights out of and in to schemes	As above	• Temporary approved by DLWC as above • Permanent only approved by DLWC only when the irrigator who is a company shareholder has agreed	Rules and restrictions for temporary and permanent transfers determined by irrigation company and authorises individual actions
• Use of water	Limitations on the application of water to land	Determined by DLWC	Responsibility of irrigation company and subject to the Land and Water Management Plan which is audited by DLWC.
Environmental impacts			

Appendix: TABLE OF DECISION-MAKING BEFORE AND AFTER PRIVATISATION

ACTIVITY OR DECISION	IMPLICATION FOR WATER RIGHTS AND ACCESS	BEFORE PRIVATISATION	AFTER PRIVATISATION
Third Party Impacts			
• Downstream water users serviced by Scheme's works	Supply to d/s users augmented by specific supply arrangements and / or from drainage flows from irrigation scheme	DLWC operated some schemes to ensure minimum flows and volumes met downstream water users' rights in accord with agreements.	• Company required to operate by to maintain similar rights as previously delivered • Licence issued to third party
• Environmental impacts		Informal controls of DLWC relatively loose conditions	• Significantly strengthened conditions in Land and Water Management Plans • Led to some tightening of environmental control on adjacent water users.(?)
• Environmental impact of water distribution	• Manner and efficiency of water distribution	DLWC administratively managed programs with no regulatory instrument issued by the Environmental management agency.– criteria internally developed within government	• LWMP formally defines outcomes required • EPA licence governs drainage quality
	• Water application rules on-farm	*As above*	LWMP formally defines rules