

15 Community issues

This chapter outlines community and social issues relevant to the proposed development, including predicted changes to the regional economy and population. The chapter investigates the potential for social impacts from the Project, and the planning process that would be adopted by Government to minimise adverse impacts and maximise positive impacts. Issues raised during community consultation activities undertaken for the Project from 1996 to February 1999 are also described.

15.1 EXISTING SOCIAL ENVIRONMENT

15.1.1 The Kimberley region

The Kimberley region represents the northernmost portion of Western Australia, extending between latitudes of approximately 14–20 degrees. It is bounded by the Timor Sea, the Indian Ocean, and the Great Sandy and Tanami deserts.

The nearest population centres to the Project Area are the towns of Kununurra and Wyndham. Both towns are in the Shire of Wyndham – East Kimberley, within the Kimberley region of Western Australia. The nearest population centres in the Northern Territory are the settlement of Timber Creek and the town of Katherine, respectively around 220 km and 510 km east of Kununurra.

In 1996, the Kimberley region had an estimated population of 25,059 (Australian Bureau of Statistics 1996), which is approximately 1.5% of Western Australia's population. Tourists to the region in the dry season can increase the population by over 25%.

As shown in Table 15.1, the population of the Kimberley increased by 11% between the 1991 and 1996 censuses. This growth is slightly higher than the State average of 9%. The rate of unemployment decreased between 1991 and 1996, and has remained below the State average.

Three-quarters of the Kimberley population reside in urban centres. The remaining one-quarter is scattered through about twenty relatively large and sixty smaller Aboriginal communities, 100 pastoral stations, seven mining sites and in the farm area of ORIA Stage 1.

The age and sex profiles of the communities in the Kimberley differ significantly from Western Australia as a whole. The age structure of the male population of the Kimberley compared with the whole of Western Australia is shown in Figure 15.1, while Figure 15.2 provides similar information for the female population. In general, the age and sex profiles of the Kimberley population, in comparison with the rest of Western Australia, is characterised by:

- a substantially higher proportion of people aged below 14 years;

- a substantially higher proportion of young adults aged 25–39 years;
- a slightly lower proportion of people aged 40–49 years;
- a slightly lower proportion of people aged over 49 years.

Table 15.1 Population, employment and household income in the Kimberley region

Indicator	Wyndham urban centre/ locality	Kununurra urban centre/ locality	Kimberley Statistical Division	Western Australia
Population				
Resident population 1991	859	4,062	29,627	1,587,050
Resident population 1996	868	4,884	33,028	1,726,095
Percentage change 1991–96	+1%	+20%	+11%	+9%
Percentage of population in labour force				
Employed 1991	85%	90%	89%	88%
Unemployed 1991	15%	10%	11%	12%
Employed 1996	94%	94%	94%	92%
Unemployed 1996	6%	6%	6%	8%
Weekly household income 1996 (percentage of households)				
\$0–\$500	38%	22%	33%	38%
\$501–\$1,000	35%	34%	35%	33%
\$1,001+	27%	44%	32%	29%

Source: Australian Bureau of Statistics 1996.

About one-quarter of the Aboriginal population of Western Australia lives in the Kimberley region, and Aboriginal people comprise about 34% of the total population of the Shire of Wyndham – East Kimberley (Australian Bureau of Statistics 1996).

The Aboriginal and non-Aboriginal populations display very different demographic and settlement trends (Kimberley Development Commission 1993). Figure 15.3 and Figure 15.4 show that the Aboriginal population is demographically stable, very young (40% under 15 years of age), and has a well-balanced sex ratio. This accounts for the high proportion of people below 14 years in the population as a whole. By comparison the non-Aboriginal population is more transient, is 56% male, and has a disproportionately high representation of persons aged 25–54 years, many of whom are in the community to obtain work. This explains the high representation of people aged 25–39 years in the population as a whole.

15.1.2 Shire of Wyndham – East Kimberley

Kununurra is the nearest town to the Project Area, approximately 30 km from the nearest area proposed for agricultural development. The town is the major urban and commercial centre for the Shire of Wyndham – East Kimberley, and is approximately 3,200 km by road from Perth and 850 km from Darwin. Kununurra was created in the early 1960s to service the development of ORIA Stage 1.

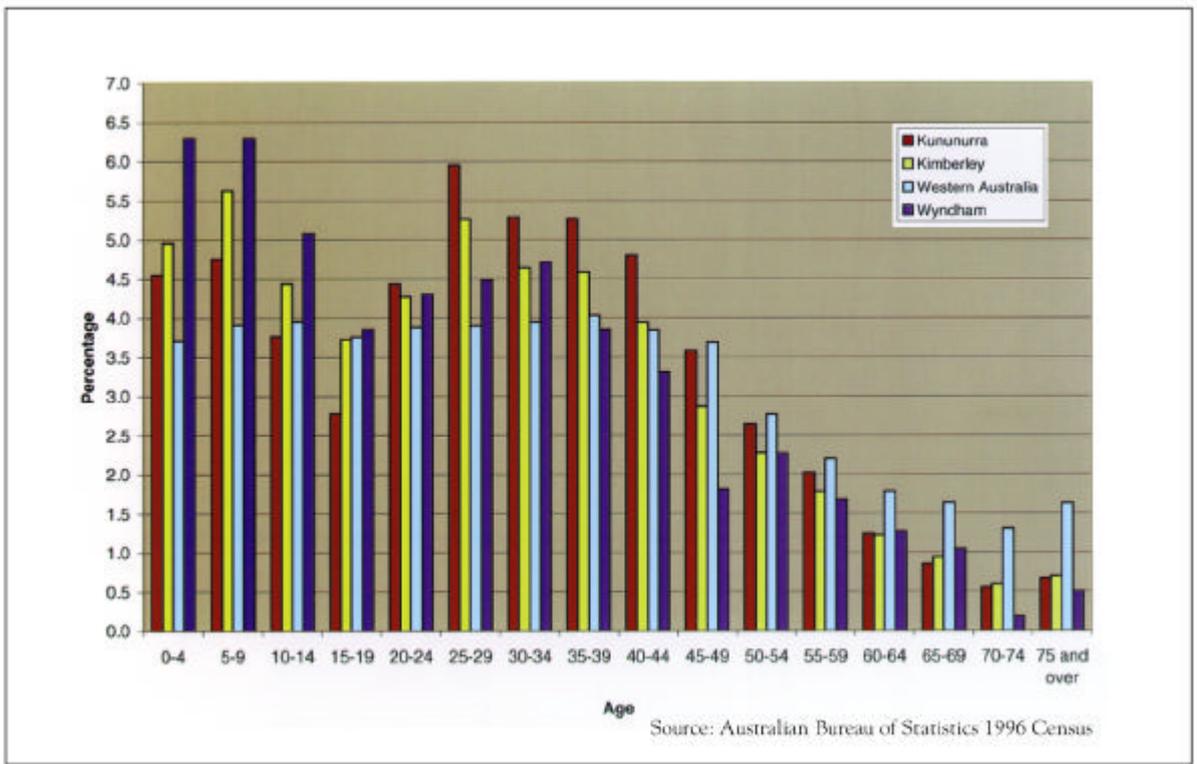


Figure 15.1 Male age structure in the Kimberley region in comparison with the whole of Western Australia

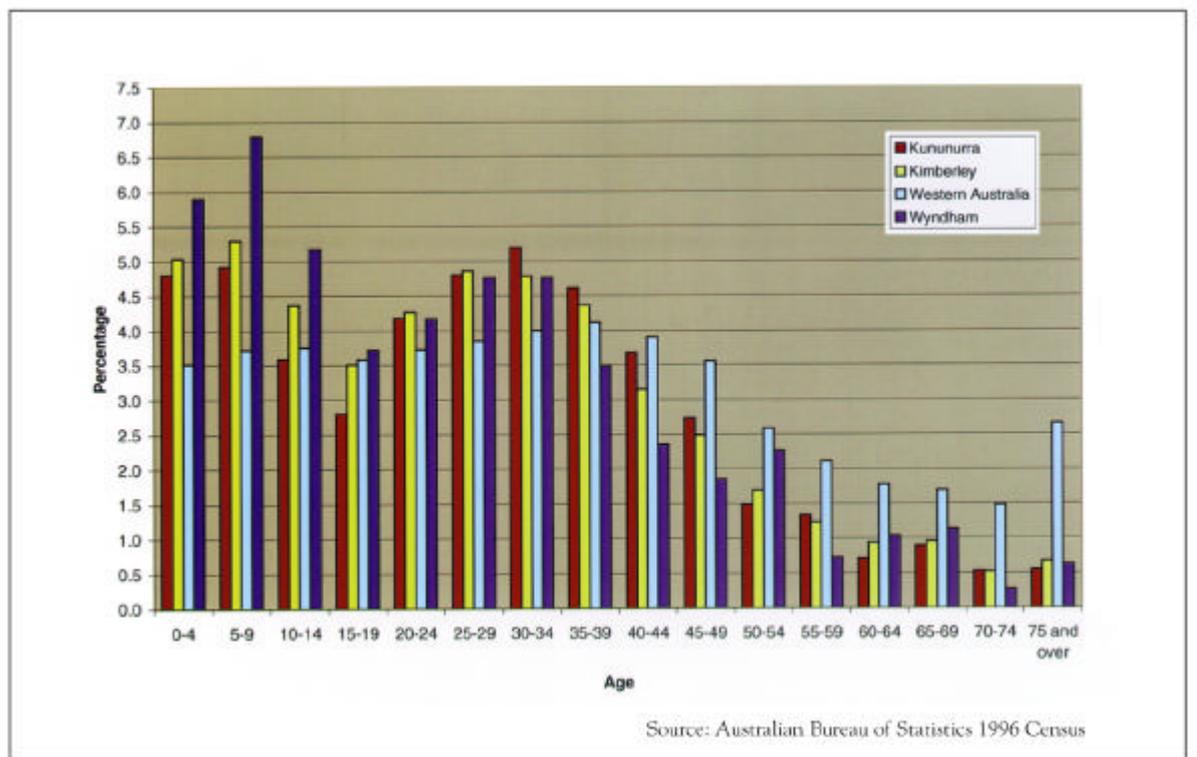


Figure 15.2 Female age structure in the Kimberley region in comparison with the whole of Western Australia

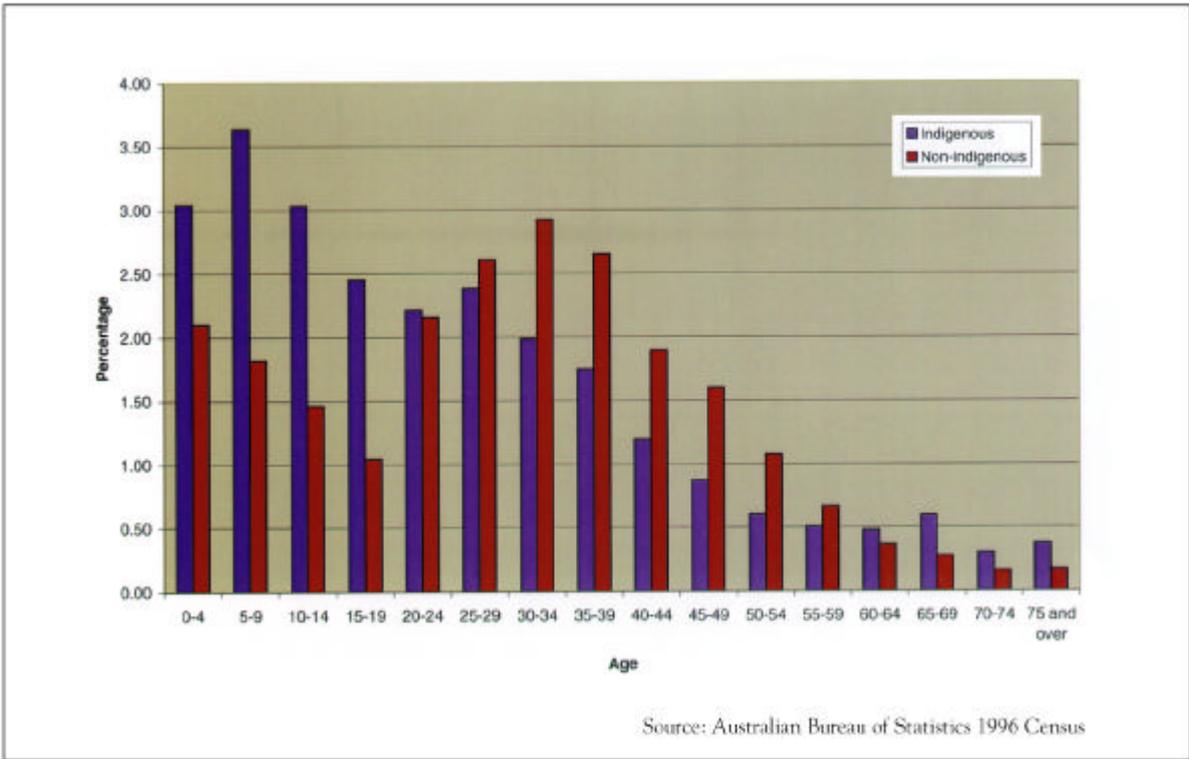


Figure 15.3 Age structure of Kimberley females in the Aboriginal community

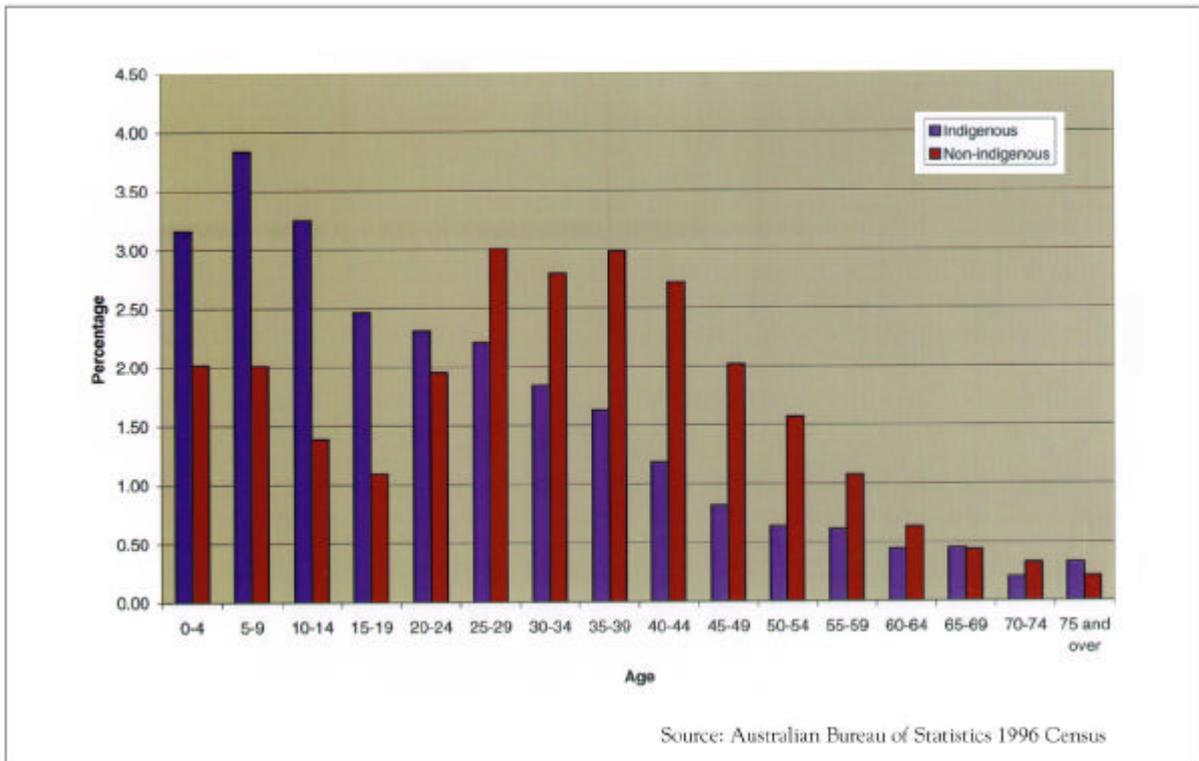


Figure 15.4 Age structure of Kimberley males in the Aboriginal community

Kununurra has experienced steady population growth since its establishment, from 337 people in 1961 to 4,884 in 1996 (Table 15.2). From 1991 to 1996, the population grew from 4,062 to 4,884, an increase of approximately 20%. This population growth is significantly higher than the State average of 9% over the same period and the Kimberley average of 11% (Table 15.1).

Table 15.2 Population trends for Kununurra and Wyndham

Township	1961	1966	1971	1976	1981	1986	1991	1996
Kununurra	337	975	1,240	1,540	2,081	3,137	4,062	4,884
Wyndham	958	1,421	1,515	1,383	1,509	1,329	859	868

Source: Beckwith & Associates 1997.

Located 100 km northwest of Kununurra on the Cambridge Gulf, Wyndham is the second largest population centre in the Shire of Wyndham – East Kimberley. In contrast to Kununurra, Wyndham is over a hundred years old, having been established in the 1880s around the time of the discovery of gold in Halls Creek. Wyndham is the nearest port to Kununurra.

Wyndham experienced a decline in population (Table 15.2) from 1981 to 1991, but the population has stabilised over the past eight years. The decline has been attributed to two factors: the closure of the local abattoir and more recently of the Wyndham prison, and growth in employment opportunities in Kununurra.

The age and sex structure of the people living in Kununurra follows the pattern of the Kimberley as a whole (Figure 15.1 and Figure 15.2). However the young (0–14 years) Aboriginal population is not as pronounced in Kununurra where the Aboriginal proportion of the population is much lower than the rest of the Kimberley region. Also the higher proportion between 25–54 years is more pronounced due to the higher proportion of non-Aboriginal people.

The age and sex structure of the people living in Wyndham also follows the pattern of the Kimberley as a whole (Figure 15.1 and Figure 15.2). However the Aboriginal population aged 0–14 years is greater than the rest of the Kimberley due to the greater proportion (41%) of Aboriginal people in Wyndham. Also, the higher proportion of people aged 25–39 years is less pronounced in Wyndham due to the lower proportions of non-Aboriginal people.

In terms of ethnicity, Kununurra has a similar proportion of people born in mainly English-speaking countries to that of the Kimberley as a whole and Wyndham (97%). This proportion is higher than the figure for the whole of Western Australia (88%).

A comparison of socio-economic indicators (Table 15.1) indicates that, in 1996, the portion of weekly household incomes in excess of \$1,000 in Kununurra was higher than the Kimberley as a whole. Compared with the Western Australian average, Kununurra had lower unemployment and a higher proportion of weekly household income in excess of \$1000. The normal labour force participation rate in Kununurra (63%) is similar to Western Australia as a whole (64%), but lower than Wyndham (69%) and the Kimberley (71%).

According to the 1996 Census (Australian Bureau of Statistics 1996) 25% of all employed persons in the Aboriginal and Torres Strait Islander Commission Wunan Region (Kununurra region) are Aboriginal, compared with an Aboriginal population of 35% of the total population. Unemployment within the Aboriginal population is approximately 8%.

compared with 4% for non-Aboriginal persons. Approximately 54% of the Aboriginal persons employed have found work under the Community Development Employment Projects (CDEP) programme (Australian Bureau of Statistics 1996). The CDEP programme provides employment and community development opportunities where conventional market activity is relatively scarce. Official employment statistics include CDEP participants as employed persons. The statistical effect of this is likely to mask the proportionate underemployment of Aboriginal people as reflected by the published labour force data (Kimberley Development Commission 1999).

15.2 EXISTING REGIONAL ECONOMY

A number of indicators illustrate that the Kununurra–Wyndham area possesses a healthy, growing and diversifying economy (Ministry for Planning 1998). Retail and other commercial activities, largely centred on Kununurra, show sustained year-round spending patterns, and building activity has remained steady throughout the past decade. Pastoral activities have remained buoyant through periods where other industries have struggled. Tourism has shown consistent growth and this is predicted to continue. Population projections prepared by the MfP suggest that the population of Wyndham – East Kimberley may grow to 9,200 by 2011 (Kimberley Development Commission 1996).

The dominant industries in the Kimberley region are mining, tourism, fishing and aquaculture, irrigated agriculture and pastoralism (Table 15.3). Whilst mining dominates in terms of Gross Domestic Value, the fly-in/fly-out component of some of the operations has limited the regional economic flow-on effect (Kimberley Development Commission 1997).

Table 15.3 Kimberley region economic summary

Industry (year)	Gross Domestic Value (\$ millions)
Minerals and petroleum (1997–98)	631.0
Retail trade (1997–98)	240.6
Fishing and aquaculture (pearling) (1997–98)	166.1
Tourism (1996)	107.5
Construction (1997–98)	66.4
Irrigated agriculture (1997–98)	59.0
Pastoralism (1996–97)	42.7
Manufacturing (1996–97)	41.9
Total	1,355.2

Source: Kimberley Development Commission 1999.

Mineral and petroleum production from the region, largely from diamond production at the Argyle Diamond Mine and from zinc/lead mining on the Lennard Shelf near Fitzroy Crossing, represents 3.5% of Western Australia’s mining revenue. Other mining activities include iron ore production at Cockatoo Island and onshore crude oil production in the Canning Basin. Exploration activities include the search for offshore and onshore petroleum, diamonds, gold and a range of other minerals.

Tourism has become a major industry in the Kimberley with the region’s scenic beauty and unique landforms being important drawcards for tourists. Due to the climate of the region, tourism is largely a seasonal industry, with an estimated 60% of tourists arriving during the dry season (April to September). The Western Australian Travel Survey produced by the Western Australian Tourism Commission estimated that there were 260,000 visitors to the

Kimberley region in 1996. Major tourist attractions and events are presented in Chapter 11. The lack of available tourist accommodation in Kununurra during the peak season has been an issue for a number of years and is viewed by the tourism industry as a limiting factor for future tourism growth. The other main constraint identified by the industry is the limited transportation infrastructure in the area, including the lack of an international airport.

The fishing industry in the Kimberley includes catches of wild stocks and an aquaculture industry sector dominated by pearling. It incorporates the Broome and Kimberley prawn fisheries, the Lake Argyle freshwater catfish fishery, the Kimberley gillnet and barramundi fishery, the Kimberley trap and demersal line fisheries, part of the North Coast shark fishery and an abalone fishery zone. In 1996 there were twenty boats licensed to catch demersal scalefish, ten boats to catch shark and ray, while another fourteen boats were licensed to catch catfish, barramundi and threadfin salmon. Pearling was the most significant activity in terms of financial return and small catches of lobster, crab, abalone and squid also made a contribution. It is noteworthy that the Kimberley's pearling industry has become Western Australia's highest value aquaculture industry. A significant part of the State's prawn fishery is sourced from the Kimberley and over the past decade the local finfish catch has also increased substantially.

The pastoral industry and irrigated agricultural operations are the two major activities contributing to agricultural production in the region. In 1997, the Australian Bureau of Statistics estimated there were 182 agricultural holdings in the Kimberley, covering an area of 24.6 million ha. Irrigated agricultural production has increased significantly in recent years; it is based predominantly on horticultural and broad-acre crops grown in the ORIA near Kununurra and also includes smaller agricultural holdings near Broome and Derby. The pastoral industry is based on rangeland production of beef cattle, which are exported live from the region to a variety of international markets, and also transported to domestic markets.

The commercial sector makes a significant contribution to the region's economy, which has a range of small and large businesses operating in a range of industry sectors. Most activity occurs in the urban centres of Broome, Derby, Fitzroy Crossing, Halls Creek, Kununurra and Wyndham. According to the 1997 Business Register Count, there are 1,498 businesses in the Kimberley. This is an increase of nearly 20% since 1995, when 1,253 businesses were registered. The wholesale and retail trade sectors employed 1,136 people in 1996 and another 585 were employed in finance, insurance, property and business services.

Manufacturing in the Kimberley region makes a small contribution to total economic activity and is primarily small scale. It supports the tourism, agriculture and mining industries, although most of the establishments specialise in food and beverage production. Other activities include production associated with the construction and metal fabrication industries.

The building and construction industry has a significant impact on employment and income in the Kimberley. At the 1996 Census, there were 562 Kimberley residents employed in construction, and the 1997 Business Register Count recorded 143 businesses in this sector. There were 389 residential dwelling approvals in 1997–98, with strong growth occurring in both residential housing and non-residential building projects.

Aboriginal communities and services provided to those communities, attract significant inflows of economic resources in the region. The Kimberley Development Commission (1999) states that research by the Australian National University in 1993 found that

expenditure directed towards Aboriginal people through a wide range of Government and non-Government programmes amounted to a total of more than \$60 million annually. The circulation of income and expenditure through the Kimberley economy arising from these programmes has a substantial positive impact on overall employment and business activity in the region. Impacts are felt particularly in the wholesale and retail trade areas, in building and construction and in some of the service industries. The programmes have also resulted in substantial infrastructure development.

Much of the income and expenditure derived from Government transfer payments is year-round, which contrasts with the seasonal nature of other regional industries, particularly tourism. An important economic stabilising effect results from the steady inflow of regional income provided by social support programmes such as the CDEP, as well as from a range of other programmes that support infrastructure development in communities and from the many organisations that provide services to Aboriginal people.

15.3 WORKFORCE AND POPULATION PROJECTIONS

15.3.1 Characteristics of the existing workforce

The workforce structure by industry in Kununurra, Wyndham and the Shire of Wyndham – East Kimberley is summarised by industry sector in Table 15.4. Of particular interest is employment in the base sector—agriculture, fishing, mining, tourism and welfare—which, in previous studies (Kimberley Development Commission 1996), has been estimated to provide about half (54%) of the employment in the Shire of Wyndham – East Kimberley. Due to the development of ORIA Stage 1, agriculture is a significant employer in Kununurra and is responsible for about 23% of the direct and indirect employment in that urban centre.

Direct employment generated by ORIA Stage 1

In terms of direct employment, it is estimated that ORIA Stage 1 generated employment of 373 full-time equivalent personnel in 1994–95 which represented approximately 12% of the total employment in Kununurra (Kimberley Development Commission 1997). Included in this estimate is casual employment, which peaked at between 200 and 250 jobs between September and November. It is also estimated that casual staff positions may be as high as 1,500 per annum, and that casual staff could be occupying a number of positions throughout the year (Kimberley Development Commission 1996).

Direct employment associated with ORIA Stage 1 includes work in relation to on farm activities (103 full time equivalent) and related activities (270 full time equivalent) such as water supply and maintenance, research and crop reporting, and secondary processing such as sugar milling (Kimberley Development Commission 1996).

Indirect employment by ORIA Stage 1

Indirect employment refers to jobs in businesses supplying goods and services to the agriculture sector. In 1996, the KDC studied the economic impacts of the existing agricultural industry in Kununurra and determined that the indirect employment created by ORIA Stage 1 was approximately sixty-four full-time equivalent positions. The resultant employment multiplier, the ratio of total (direct plus indirect) jobs over direct jobs, is therefore approximately 1.17. This low figure is consistent with the high expenditure outside of the region (84%) by local supply businesses and retailers.

Table 15.4 Employment by occupation in the Shire of Wyndham – East Kimberley

Industry sector	Kununurra		Wyndham		Shire of Wyndham – East Kimberley	
	Number of people	Percentage of total	Number of people	Percentage of total	Number of people	Percentage of total
Agriculture, forestry, fishing	191	10%	11	4%	374	10%
Mining	30	2%	0	0%	394	11%
Manufacturing	115	6%	6	2%	150	4%
Electricity, gas and water	41	2%	0	0%	49	1%
Construction	139	7%	10	4%	230	6%
Wholesale trade	91	5%	12	4%	135	4%
Retail trade	190	10%	28	10%	265	7%
Accommodation, cafes and restaurants	138	7%	6	2%	230	6%
Transport and storage	138	7%	21	8%	207	6%
Communication services	20	1%	3	1%	24	1%
Finance and insurance	42	2%	3	1%	51	2%
Property and business services	155	8%	12	4%	209	6%
Government administration and defence	130	7%	37	13%	188	5%
Education	162	8%	44	16%	264	7%
Health and community services	147	8%	57	21%	438	12%
Cultural and recreational services	19	1%	6	2%	38	1%
Personal and other services	82	4%	6	2%	162	5%
Non-classifiable economic units	34	2%	0	0%	65	2%
Not stated	62	3%	18	6%	159	4%
Total	1,926	100%	280	100%	3,632	100%

Source: Australian Bureau of Statistics 1996 Census

Induced employment by ORIA Stage 1

Induced employment refers to jobs created by the personal consumption and public support of people employed directly and indirectly in the agriculture sector. Quantification of induced effects is technically difficult due to the complexity of later-round expenditure flows, difficulties in obtaining information about personal spending habits, and the lack of a clear and direct link between activity on farm and activity in sectors such as community support (Kimberley Development Commission 1996b).

In 1996, the KDC provided a highly qualified order-of-magnitude estimate that ORIA Stage 1 supported, or justified, around one-fifth of the employment in the non-base (service) sectors. In terms of employment, this equated to about 340 full-time jobs in 1994–95.

15.3.2 Project workforce

Operational workforce

The estimated direct workforce required for the proposed development would be approximately 550 full-time equivalent positions. This estimate includes employment on the corporate and independent farms, in management and administration, in the sugar mill, in harvest and transport operations, and water supply operation. If the estimated employment multipliers that apply to ORIA Stage 1 were used, an estimated indirect workforce of about ninety-five people and an induced workforce of about 500 people would result. However, both of these are likely to be overestimates, particularly the induced workforce, as they would be based on the assumption that all service industries in Kununurra were operating at full capacity. In reality this is unlikely to be the case, and Project planning has therefore been based upon an estimated indirect workforce of seventy-five people and an induced workforce of 200.

Construction workforce

It is expected that, over a three-year period, the numbers of construction personnel would range from 250 to 650 per annum. While as many construction workers as possible would be sourced locally, it is anticipated that the majority would originate from outside the Shire of Wyndham – East Kimberley and would be accommodated in a self-contained construction camp to be built in the centre of the Project Area. The anticipated workforce numbers that would be accommodated at the construction camp are shown in Figure 5.5. It is envisaged that construction workers would work on a six-weeks-on/one-week-off roster, and return to their places of origin during their ‘off’ period.

The construction camp would initially be developed to accommodate approximately 650 construction workers at any one time, all with ‘single’ status. At the completion of construction, part of the construction camp may be removed off site, leaving a reduced number of approximately 200 accommodation units for use by seasonal workers during the operational phase of the Project (Section 15.4.2).

15.3.3 Local population projections

A number of assumptions have been made in order to calculate the likely increase in permanent population resulting from the Project. These assumptions have been based on the premise that the characteristics of the additional operational workforce would be the same as those recorded by the 1996 Australian Bureau of Statistics Census, namely that:

- of the new workforce (direct, indirect and induced) approximately 75% would live with their family in Kununurra and 25% would live as single persons;
- of those who are married, 65% would be in households with children while 35% would be couples without children;
- there would be on average a single full-time worker in every household with children, and 1.3 full-time workers in every household without children;
- the average size of households with children would be 4.

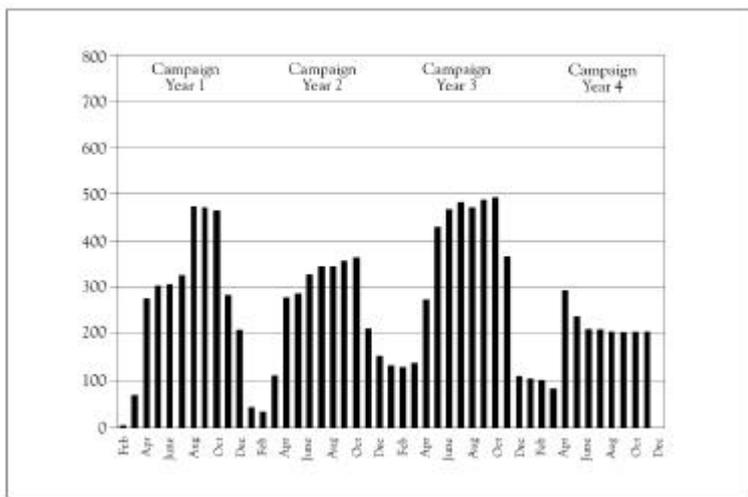


Figure 15.5 Camp workforce numbers

Table 15.5 provides two projections for the increase in population of Kununurra that could result from the Project. These projections relate to two assumptions regarding the number of employment positions that would be filled by people currently living in Kununurra and who are currently not fully employed. Such people include the unemployed (128—1996 Census), and people who are underemployed (people in part-time employment or currently not seeking employment). One scenario is the ‘high projection’ of resultant population increase, which assumes that seventy-five currently unemployed or underemployed people in Kununurra would gain full-time employment as a consequence of the Project. The other scenario is the ‘low projection’ of resultant population increase, which assumes that 300 of the currently unemployed or underemployed population would gain full-time employment as a consequence of the Project.

It can be seen from Table 15.5 that the estimates of net population increase in Kununurra range from 1,367 persons to 1,954 persons.

Table 15.5 Estimated profile of additional workforce and resulting population increase

Profile characteristic	Low projection	High projection
Workforce characteristics		
Direct	550	550
Indirect	75	75
Induced	<u>200</u>	<u>200</u>
Total increase in local workforce	825	825
Labour supplied locally	<u>300</u>	<u>75</u>
Net increase in local workforce	525	750
Household type		
Single (25% of new workforce)	131	188
Couples without children (1.3 workers per household)	106	151
Families (1.0 worker per household)	256	366
Resultant population		
Single (household type × 1)	131	188
Couples (household type × 2)	212	302
Families (household type × 4)	1,024	1,464
Total resultant population	1,367	1,954

15.4 SOCIAL IMPACT ASSESSMENT

15.4.1 The Kununurra–Wyndham Area Development Strategy

The Kununurra–Wyndham Area Development Strategy (KWADS) is in the final stages of preparation by the MfP, in cooperation with the KDC, the Shire of Wyndham – East Kimberley and the Department of Lands, Planning and Environment.

KWADS is intended to provide direction for the long-term use and management of land in the Kununurra–Wyndham area. It will also promote further coordination of activities and initiatives of community, private enterprise and Government agencies with responsibilities in the area. The purpose of the strategy is to:

- formulate a long-term (twenty-five years) development strategy for the Kununurra–Wyndham area, thereby providing a consistent focus for Government agencies;
- prepare a subregional plan that will guide land use, development and conservation;
- prepare structure plans for the towns of Kununurra and Wyndham for future urban expansion and community infrastructure coordination;
- provide guidance for the development of the Lake Argyle Development Node, Mantinea Flats, new service centres for ORIA Stage 2 and for Aboriginal community settlement planning;
- identify areas for further research.

When adopted, the outcomes of the strategy will:

- provide the basis for the review and preparation of the local town planning schemes;
- provide the basis for statutory planning and development control;
- provide a basis for servicing and transport agencies to plan future requirements;
- guide planning, development and conservation in the area;
- define new mechanisms for implementing ongoing cooperation and coordination between the community, industry, the Shire of Wyndham – East Kimberley, and the Western Australian and Northern Territory Government agencies involved in planning and management.

A public consultation programme formed an integral part of KWADS. The consultation programme included the Northern Territory Government, as a portion of ORIA Stage 2 is in the Northern Territory.

Of importance to the Project is that KWADS is to consider the land-use planning and infrastructure needs of the Kununurra–Wyndham area in the context of further development of ORIA Stage 2, including the Project Area. This should provide a sound basis for statutory authorities to plan the long-term provision of services in the area, including a significant expansion of Kununurra.

15.4.2 Housing development

Discussions with the Shire of Wyndham – East Kimberley have indicated that it has a strong preference for the Project workforce to be based in existing urban areas within the Shire

(Andrew Hammond, Shire of Wyndham – East Kimberley, *pers. comm.*), rather than in purpose built accommodation in the Project Area. Kununurra currently has limited stock of surplus housing and if the Project workforce were to be based in existing urban areas, it is clear that additional residential accommodation would have to be developed in Kununurra, and possibly Wyndham.

If it were assumed that purpose built accommodation would be required for all workers associated with the Project; direct, indirect and induced; the accommodation demand would be as summarised in Table 15.6.

Table 15.6 Accommodation requirements for additional workforce

Household type	Low projection	High projection
Single	131	188
Couples without children	106	151
Families	256	366
Total	493	705

As mentioned in Section 15.3.2, approximately 200 single units may remain operational in the refurbished construction camp following the end of project construction activities. These units may be used by seasonal workers on the corporate farm, by transport and harvesting contractors, and seasonal sugar-mill staff. It is envisaged that the major portion of the Project’s accommodation requirements would be serviced by the township of Kununurra.

Sufficient residential lots in the undeveloped portion of the existing Lakeside subdivision and the proposed Hidden Valley subdivision are available for the construction of over 600 additional houses and flats, which would be sufficient to meet the accommodation requirements associated with the proposed development. It is not envisaged that Wesfarmers–Marubeni and the Water Corporation would not be directly involved in the development of the new land for housing. It is anticipated that new residential land would be released for development by DOLA in response to the demand for accommodation created by the Project, and private developers would develop that accommodation.

The lack of tourism accommodation is already a problem in Kununurra, particularly in the dry season. The cumulative effect of project seasonal workers who are not housed at the construction camp and the tourist influx is therefore of particular importance. However, it is expected that significant prolonged demand for temporary accommodation during the project construction period could lead to private development of additional hotels or other short-stay facilities, thus providing a long-term benefit to the tourist industry in Kununurra and the East Kimberley. Expansion of the existing caravan parks may also cater for the demand for additional accommodation.

15.4.3 Infrastructure expansion

Water

Potable water for the construction camp, and for the operational requirements of the Project, would be obtained from bores established in the Project Area and would not impact on the current water supply for Kununurra. Water requirements for Kununurra are currently met from existing groundwater reserves in gravel beds recharged by Lake Kununurra. It is

envisaged that sufficient groundwater reserves would be available for the projected population increase in Kununurra as a result of the proposed development.

Sewerage

An enviro-cycle sewage treatment plant would be provided at the construction camp. Enviro-cycle sewerage treatment plants would also service all sewerage treatment requirements during the operational phase of the Project.

Wastewater treatment facilities in Kununurra are currently at approximately 70% capacity. It is envisaged that the available capacity may need to be increased marginally to cater for the projected population increase for Kununurra.

Power

Power for Kununurra and Wyndham is generated by the Ord Hydro hydroelectric facility at Lake Argyle. The same facility also supplies part of the power requirements for the Argyle Diamond Mine. The facility has a 30 MW capacity, of which about 10 MW is currently dedicated to supply electricity to ORIA Stage 1, Kununurra and Wyndham.

Most of the Project's power requirements would be generated at the sugar mill by the burning of the bagasse residue (in a boiler) from the milling of sugar cane. However, if local generating capacity is not used, there may be a modest additional power requirement from the grid for Project operations during the wet season when the mill would not be operational. Also, further year round demand would be generated by growth forecasts for Kununurra as a result of the Project. It is envisaged that the current system would have the capacity to supply this relatively small additional power demand generated by the Project.

Waste management

Domestic solid waste is currently disposed of at the Kununurra and Wyndham landfill sites. The Kununurra facility currently has some ten years of expected life. However, an increase in the population of Kununurra would lead to a proportionate reduction in the lifespan of the Kununurra site and a new site would have to be developed, probably in the next few years. A new solid-waste management facility would then need to be provided by the Shire of Wyndham – East Kimberley in accordance with the requirements of the Western Australian Health Department and the DEP.

Domestic waste from the Project Area would be collected in bins located at the sugar mill, construction camp and maintenance facilities. The bins would be collected regularly for waste disposal at the Kununurra landfill site.

Airport

Kununurra Airport currently services local and interstate flights. Expansion of the airport is not a requirement for the Project, however, increased numbers of flights may be required.

Roads

Main Roads Western Australia has commenced a study into the road network requirements of the east Kimberley, including roads within and around the Project Area and road connections to Kununurra and Wyndham. The study is being undertaken in two parts:

- investigation of the regional road network needs, which has lead to recommendations regarding the preferred road network for the region;
- route selection and planning for each of the roads part of the preferred network.

The first stage of identifying the preferred regional road network has been completed, and has resulted in the following recommendations of relevance to the Project:

- a second crossing of the Ord River should be provided in the vicinity of Buttons Crossing, linking existing roads in ORIA Stage 1 and Parry Creek Road;
- upgrading and sealing of Parry Creek Road, from the new Ord River Crossing to the junction with Great Northern Highway, should be completed.

When implemented, the above recommendations would provide a more direct route between the proposed sugar mill and Wyndham than is currently available. As well as reducing the travel time for trucks transporting product from the Project, the recommended road network would reduce traffic and noise impacts from these vehicles on the outskirts of Kununurra.

15.4.4 Public services

Medical

The central hospital facility in the East Kimberley is the Kununurra Hospital, which has twenty-six beds with existing demand running at twenty-one or twenty-two beds. There are four doctors on staff and, while some specialist health services are available in Kununurra (i.e. pathology, X-ray, occupational therapy, a private dental clinic), there is no surgeon at the hospital or resident in the East Kimberley. A surgeon visits from the West Kimberley every two to four weeks. There are a part-time general practitioner and two mental health nurses in town, and a psychiatrist visits as required.

The influence of the Project and other ORIA Stage 2 developments has already been factored into the planning requirements of the Kununurra hospital. Plans exist to add another ten beds to the hospital to accommodate any increase in demand for hospital services from anticipated growth. One benefit of an increase in population is that it may lead to a full-time private general practitioner establishing in Kununurra.

It is likely that the East Kimberley Aboriginal Medical Service (EKAMS) would be required to service a larger patient load due to a significant increase in the non-Aboriginal population in Kununurra. Currently, more than 30% of the patients using the EKAMS are non-Aboriginal. Increased resource allocations for the EKAMS or changed policies on access to the clinic in Kununurra may be required to avoid delays in the provision of medical services to Aboriginal patients.

Education

Kununurra has two schools: Kununurra District High School (pre-primary to Year 12) and St Joseph's Catholic School, which mainly caters for Aboriginal students of pre-primary and primary age. Currently there is no senior high school in either Kununurra or Wyndham.

The anticipated population growth and projected increase in enrolments may necessitate development of another combined pre-school and primary school, possibly in the vicinity of the Lakeside subdivision. The population growth may also precipitate an upgrade of the

Kununurra District High School to a senior high school, a move that would be welcomed by the local community.

Post-secondary education is offered through the Kimberley College of Technical and Further Education through its centres in Broome, Derby, Halls Creek, Kununurra and Wyndham. The college is expanding its services to the Kimberley region and is currently constructing a new main campus and aquaculture annexe in Broome. Upgraded facilities have recently been completed in Kununurra, Wyndham and Halls Creek.

Other post-secondary facilities in the Kimberley region include telecentres located in Broome, Derby, Halls Creek, Wyndham and Kununurra, which offer education through video-conference and other electronic facilities. These centres are available to regional students enrolled in institutions across Australia.

15.4.5 Regional recreational resources

The Ord River and the Keep River environments play a vital role in the lives of both Aboriginal and non-Aboriginal people in terms of recreation and lifestyle. The Lower Ord River supports significant fishing activity, and angler's fish from the banks and from small boats. Lake Kununurra supports a range of recreational activities, including boating, water-skiing, jet skiing and houseboating. The Keep River is also a popular destination for anglers, although access is currently limited at times due to weather and pastoral activities.

A recent survey (West et al. 1996) highlighted the importance of recreational fishing to the community. The study estimated that 50% of the non-Aboriginal resident population actively participate in recreational fishing, with 40% of survey respondents indicating that fishing was their main or second-to-main outdoor recreational activity. Of the resident Aboriginal population, the study reported that around half had actively participated in fishing in the previous twelve months. West et al. (1996) also reported that fishing for food is more important than sport fishing within the Aboriginal population.

Tourists make up a substantial component of recreational anglers using the Ord River during the dry season. There are at least three commercial charter boat operations that cater for tourists in the dry season.

Given the importance of the local waterways for both recreational and lifestyle purposes, the maintenance of access to the waterways is an important social impact issue. This is particularly true for the local Aboriginal community for whom access to the riverbanks and the water is of socio-cultural importance. The Project has been designed in such a way that access to the Keep River would be maintained (Section 11.4 refers). The proposed development would have no impact on access to the Ord River.

The Kununurra Leisure Centre, which includes a swimming pool, squash courts and gym, is currently operating well below capacity and would readily cope with additional patronage.

Sporting ovals in Kununurra are currently fully utilised. The Shire of Wyndham – East Kimberley is investigating this issue, and it is likely that another oval suitable for training will be developed in the near future to cater for existing needs (T. Brown, Shire of Wyndham – East Kimberley, *pers. com.*, 16 August 1999). A further sporting oval, probably located at Lakeside, may be required if the Project proceeds.

15.4.6 Towns in the Northern Territory

Timber Creek

Timber Creek, some 226 km from Kununurra, is the closest Northern Territory population centre to the Project Area. It is unlikely, however, that the Project would have a significant impact on this community. Any impacts would likely be beneficial, and linked to increased trade for roadhouses, and possible increases in local tourism.

Katherine

The Project is not expected to have any social impact on Katherine, located approximately 500 km northeast of Kununurra. However, local Government officials view Katherine and Kununurra as two communities that complement one another because of their northern locations and investment in horticulture. Horticulture is continuing to expand in Katherine, and some Katherine businesses already carry out work in Kununurra. Expansion of agricultural activities as a result of development of the Project Area may provide the opportunity for expansion of Katherine-based businesses.

15.4.7 Construction workforce issues

The majority of the construction workforce would be accommodated in a construction camp at the centre of the Project Area. This facility would provide accommodation for about 650 workers, which would be sufficient to cater for the peak construction workforce requirements of the Project. Therefore, the social impact of this workforce on the town of Kununurra is expected to be minimal. A high standard of amenities would be provided at the construction camp, including recreation and entertainment facilities, thereby limiting the need for construction workers to travel to Kununurra. It is likely that some would still wish to frequent the townships of Kununurra and Wyndham, which would create additional custom for local businesses.

15.5 COMMUNITY CONSULTATION

Significant community consultation has been undertaken in relation to the proposed development. The consultation has been implemented in two main stages:

- in 1996 and 1997, during preparation of an unpublished Public Environmental Review undertaken by Sinclair Knight Mertz on behalf of the DRD;
- in 1998 and 1999, during preparation of this ERMP/DRAFT EIS.

Objectives of the community consultation programmes, activities conducted, organisations consulted and issues raised are presented in the following sections.

15.5.1 Consultation objectives

The community consultation programme was aimed at:

- ensuring that all interested people, groups and organisations were informed of the Project;
- ensuring that all interested people, groups and organisations had the opportunity to comment on the potential environmental (natural and social) impacts of the Project;

- enabling study teams to understand community values relating to natural resources in the region, as those values related to the proposed development.

15.5.2 Consultation activities

Consultation activities undertaken for the Project are discussed below. A list of organisations that have been consulted is presented in Appendix E.

Media campaign and advertising (ongoing)

The media campaign and advertising have included press releases and interviews with media outlets. Media outlets targeted for the release of information are provided in Table 15.7.

Table 15.7 Media outlets utilised in the community consultation programme

Region	Kimberley Echo	Northern Star Magazine	ABC Radio	Waringarri Radio	Katherine Times	Imparja TV	Hot 100 Radio	NT News	The West Australian	GWN
Kununurra	✓	✓	✓	✓	–	–	–	–	–	–
Broome	–	–	✓	–	–	–	–	–	–	–
Katherine	–	–	–	–	✓	–	–	–	–	–
Northern Territory	–	–	✓	–	–	✓	✓	✓	–	–
Western Australia	–	–	–	–	–	–	–	–	✓	✓

– Indicates media outlets were not used in the region.

Distribution of consultation brochure and response sheets (1996–97)

A mail-out of a brochure describing the Project was conducted in 1996–97 for Kununurra and Wyndham in order to achieve the maximum public awareness of the Project. The brochures included comment sheets that promoted community feedback. The brochures were distributed to all post boxes in Kununurra and Wyndham, were made available at public displays and meetings, and remained available at local council offices for approximately three weeks. A total of 2,500 brochures were printed and distributed.

Direct consultation (1996–97)

Direct contact was made with groups and organisations that were identified as having a specific interest in the Project. This contact was by telephone, fax or letter, and a copy of the consultation brochure was sent or included where appropriate. These groups and organisations were invited to attend a public meeting or to contact the study team to discuss relevant issues. A list of groups and organisations consulted is contained in Appendix E.

Free Call information telephone line (1996–97)

A Free Call telephone line was established and was identified in consultation materials. This line enabled people to ring for more information or to discuss issues they felt were important.

Public displays and meetings (1996)

Public displays and meetings were held at Kununurra, Wyndham, Timber Creek and Katherine over the period 9 November to 14 November 1996. During this period more than 150 verbal inquiries were received and sixty-seven people attended the various public meetings.

Community Relations Team

A Community Relations Team comprising a full-time Community Relations Officer (Wesfarmers) and a full-time Project Manager (the Water Corporation) was established in Kununurra in mid-1998. The role of the team has been to keep the local community informed on issues arising from the development of the Project on a day-to-day basis. This team is supported by regular visits by other staff of Wesfarmers–Marubeni and the Water Corporation and their consultants.

Public displays and meetings (1998–99)

Four public meetings were conducted in Kununurra and Wyndham in 1998. The meetings were informed of progress of key elements of the feasibility study, including the environmental analysis, and provided an opportunity for community feedback. Around 102 people attended the August meeting in Kununurra, and eighty attended the December meeting. Approximately fifteen people attended workshops conducted in Wyndham in the same months. Further meetings are planned.

Environmental workshop (1998–99)

An environmental workshop was conducted in Kununurra on 9 and 10 December 1998. The workshop was attended by some sixty delegates representing the Governments of Western Australia, the Northern Territory and the Commonwealth; conservation and grower groups; Wesfarmers–Marubeni and the Water Corporation and their consultants; and other interested individuals. Issues raised at the workshop were published in conference proceedings, which were issued to all delegates in December 1998.

Individual consultation (1998–99)

Consultation has been carried out with various community groups throughout the course of preparing this ERMP/draft EIS. The organisations consulted are identified in Appendix E.

Consultation with Aboriginal people (1998–99)

Consultation with local Aboriginal people has been extensive during 1998–99 and is ongoing. The Project Community Relations Officer has facilitated this consultation with presentations given to regular meetings with Aboriginal people by staff and consultants of Wesfarmers–Marubeni and the Water Corporation. This consultation is ongoing, and is described further in Chapter 12.

15.5.3 Proposed management measures for key issues

Within the local community there is an almost universal positive attitude towards the Project. Even so, as a major project it carries with it social implications of considerable significance to the existing population and communities within the region. Table 15.8 summarises the major issues raised during the various community consultation programmes, and specifies

the chapter/section of the ERMP/draft EIS that provides information on how the issue would be addressed.

Table 15.8 Summary of key issues raised during community consultation

Issue	Summary of comments	Proposed management measures
State/Territory cooperation, cross-border issues, and compliance with environmental conditions	<p>Consensus needed on issues such as quarantine, power, etc.</p> <p>How will environmental conditions be enforced?</p> <p>Who will conduct the monitoring?</p>	<p>State/Territory cooperation is currently being guided by a Memorandum of Understanding between the two Governments. A Ministerial Council will be established in due course to investigate the cross-border issues and to make recommendations on the development of a consistent set of legislation applicable to the Project Area.</p> <p>An environmental management framework has been developed for the Project, which addresses responsibilities for compliance with environmental conditions and monitoring. This framework is described in Chapter 16 and Appendix O.</p>
Groundwater protection	<p>Rate of accessions to groundwater.</p> <p>Potential for future salinity problems and waterlogging.</p> <p>Sustainability of production.</p>	<p>A proactive groundwater management system has been incorporated into the Project; it includes:</p> <ul style="list-style-type: none"> • avoidance of areas prone to groundwater problems; • minimisation of groundwater accessions by design standards for infrastructure and water application strategies for farming; • development of a groundwater management strategy, including the use of dewatering bores. <p>The Project has been designed with the intention of achieving sustainable long-term production. Groundwater issues are discussed in greater detail in Chapter 6.</p>
Surface water protection	<p>Impacts upon other users (Lower Ord River).</p> <p>Changes in Ord River and Keep River hydrology, quality and ecology.</p> <p>Impacts (fertilisers and chemicals) of farm discharges.</p>	<p>The hydrology of the Ord River has been changed forever by construction of the dams forming Lake Argyle and Lake Kununurra. The Water and Rivers Commission has commenced the development of a Water Allocation Plan for the river catchment that would balance water allocations to various users, and would include maintenance of environmental values. The Project's water requirements are consistent with the interim allocation proposed by the Commission. A fundamental environmental management feature incorporated into the Project is the provision of tailwater return systems to all farming areas developed. These systems would virtually eliminate regular tailwater discharges and, therefore, many of the water quality issues normally associated with older irrigation schemes would be avoided. Water management issues are described in Chapter 5.</p>
Protection of aquatic ecosystems	<p>Maintenance of riparian vegetation.</p> <p>Control of erosion.</p>	<p>Riparian vegetation within the Project Area along significant watercourses would be conserved. The location and height of flood protection levees have been selected to minimise the effects of erosion.</p>
Protection of terrestrial flora and fauna	<p>Protection of habitat (reserves and corridors).</p> <p>Management of weeds and pests.</p>	<p>The Project strategy includes the provision of conservation areas, including wildlife corridors where appropriate, assessed as providing viable representative samples of the local habitats. A full description of the conservation strategies is presented in Chapter 10. The management measures proposed to mitigate the secondary land-use effects of an increased population and improved access are described in Chapter 11. Management responsibilities for the conservation areas are discussed in Chapter 16.</p>

Table 15.8 Summary of key issues raised during community consultation (continued)

Issue	Summary of comments	Proposed management measures
Maintenance of air quality	Fallout from cane fires. Effects of farm chemicals (herbicides and pesticides) on the environment.	The effect of cane fire fallout on existing residential areas would be naturally ameliorated by the remoteness of the Project Area and specific management measures are not considered necessary. Sugarcane has a low requirement for farm chemicals and it would be the predominant crop for the Project Area. Farm chemical use would be controlled by a combination of statutory and project-specific measures, as described in Chapters 3, 5 and 14.
Aboriginal heritage	Protection of sites. Reduction of areas or quality of areas available for traditional uses. Native Title.	This consultation process has been extensive and is ongoing, with the objective of developing an Indigenous Land Use Agreement that is equitable to all parties. Chapter 12 outlines the consultation process undertaken by Wesfarmers–Marubeni and the Water Corporation with the Miriwung and Gajerrong people.
Social environment	Development pressures on Kununurra. Potential new township. Adequacy of community facilities. Impacts of tourism and recreational values of the region. Development of community reliance on monoculture creating potential risks.	Most Project accommodation requirements would be sourced from Kununurra, which is perceived to be of economical benefit to the town. The project workforce would be obliged to comply with ongoing community programmes to protect the region's tourism and recreational values. Sugarcane would be the dominant crop; however cropping diversity may be introduced by land developed by independent farmers.