

SERIES NOTE

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July 2005

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FOREWORD

Early in 2004, Dr John Taylor of CAEPR completed CAEPR Monograph 24, *Social Indicators for Aboriginal Governance: Insights from the Thamarrurr Region, Northern Territory* as input to the ICCP/COAG trial focused on the town of Wadeye and surrounding outstations. This study uncovered a regional population that is relatively sick, poorly housed, illiterate, innumerate, on low income, unemployed, and with sub-standard physical infrastructure. Accordingly, questions were asked by the COAG partners as to the opportunity cost—both to governments and the local community—of sustaining this status quo. An initial answer to the question was provided in February of 2005 with the release of a report co-authored by Dr Taylor and Associate Professor Owen Stanley of the James Cook University Business School that has attracted considerable media coverage.

All of the public expenditure data included in that initial report (and in this present paper) were provided by relevant Commonwealth and Northern Territory government departments, as well as from the Thamarrurr Regional Council, following a lengthy and comprehensive process of verification at source. Notwithstanding this process, the Northern Territory Department of Employment, Education and Training signalled (post-publication) that it would like to prepare an alternate, revised, set of expenditure data that it declared would present a more precise picture of education spending. Accordingly, once these data were made available, the original report was withdrawn from electronic circulation through the CAEPR website and replaced by the present report, containing these revised data. The present report is also provided in more standard CAEPR Working Paper format. The temporary withdrawal of the report from circulation merely reflected the authors' aim to provide the most accurate information as provided by government agencies.

In effect, the upshot is little change at all to major conclusions, with the key findings still indicating massive foregone production and net remedial under-spending on the basis of need, especially evident in such areas of public expenditure as education and training, which are important positive investments.

This is an extremely important report for many reasons. It is based on exhaustive research with many agencies over a period that now extends beyond a year. It also builds on Dr Taylor's baseline study and population forecasts to highlight both the current under-investment in the Thamarrurr region, given need and historic under-expenditure, and the future opportunity costs embedded in the status quo. Thamarrurr, of course, is only one of eight COAG trial sites and one of literally hundreds of discrete Indigenous communities in remote and very remote Australia. In my view, Drs Taylor and Stanley have provided a significant pioneering study that is unprecedented in Australia, and one that should be replicated for many other situations. My concern is that the capacity to undertake similar research elsewhere is limited, especially given the exhaustive nature of the task. My other concern is that the political will to support such revealing, arguably essential, evidence-based research to assist proper development planning and action might be limited.

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Disclaimer

All expenditure data reported in this document are derived variously from Australian and Northern Territory government departments and the Thamarrurr Regional Council. They are reported here after a process of verification at source.

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ABSTRACT

Given the substantial deficits in economic activity, infrastructure and human capital identified by the ICCP/COAG trial in the Thamarrurr Region of the Northern Territory, questions were asked by the COAG partners as to the opportunity cost—both to governments and the local community—of sustaining the status quo. This report presents the findings of a study aimed at answering these questions. It follows a methodology first deployed by the Canadian Royal Commission on Aboriginal Peoples. Using secondary data sources and information on program expenditures provided by Commonwealth and Northern Territory government departments it quantifies both costs due to foregone production and costs due to the remedial actions necessary to compensate for low socioeconomic status as benchmarked against an average set of costs—in this case those incurred in the Northern Territory as a whole. Analysis of these costs reveals that the value of output forgone at Thamarrurr amounts to \$43.8 million per annum. As for remedial costs, these are found to be negative to the tune of \$4 million per annum. Thus after accounting for all government dollars and transfer payments expended on residents of the Thamarrurr region, far less is spent on them per head than is spent on the average Territorian. What emerges is a structural imbalance in funding at Thamarrurr, with lower than average expenditure on positive aspects of public policy designed to build capacity and increase output, such as education and employment creation, and higher than average spending on negative areas such as criminal justice and unemployment benefit. This begs a very important question as to whether this situation serves to perpetuate the very socioeconomic conditions observed at Thamarrurr in the first place.

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
AHW	Aboriginal Health Workers
AIHW	Australian Institute of Health and Welfare
AIMS	Australian Institute of Marine Science
ANSTO	Australian Nuclear Science and Technology Organisation
ANU	The Australian National University
AQIS	Australian Quarantine and Inspection Service
ARC	Australian Research Council
ASSPA	Aboriginal Student Support and Parent Awareness
ATSIC/S	Aboriginal and Torres Strait Islander Commission/Services
CAEPR	Centre for Aboriginal Economic Policy Research
CDEP	Community Development Employment Projects (scheme)
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCDSCA	Department of Community Development, Sport and Cultural Affairs (Northern Territory)
DEET	Department of Employment, Education and Training (Northern Territory)
DEST	Department of Education, Science and Training
DEWR	Department of Employment and Workplace Relations
DFACS	Department of Family and Community Services
DHCS	Department of Health and Community Services (Northern Territory)
DMO	District Medical Officer
DoHA	Department of Health and Ageing (Commonwealth)
DoTARS	Department of Transport and Regional Services (Commonwealth)
ERP	estimated resident population
ESL-ILSS	English as a Second Language—Indigenous Language Speaking Students
FTB	Family Tax Benefit
GDP	Gross Domestic Product
HACC	Home and Community Care

HLC	Homeland Learning Centres
ICCP	Indigenous Communities Coordination Pilot
IESIP	Indigenous Education Strategic Initiative Program
ILO	International Labour Organisation
IHANT	Indigenous Housing Authority of the Northern Territory
JCU	James Cook University
MBS	Medicare Benefits Schedule
MCATSIA	Ministerial Council for Aboriginal and Torres Strait Islander Affairs
NAHS	National Aboriginal Health Strategy
NILF	not in the labour force
NGO	non government organisation
OIP	Office of Indigenous Policy (Northern Territory Government)
OIPC	Office of Indigenous Policy Coordination
PBS	Pharmaceutical Benefits Scheme
SLA	Statistical Local Area
STEP	Structured Training and Employment Projects (DEWR)
TAFE	Technical and Further Education
VET	Vocational Education and Training
WFD	Work for the Dole
UNSW	University of New South Wales

EXECUTIVE SUMMARY

THE THAMARRURR COAG TRIAL

An initial step in the process of evaluating the social and economic impact of the Indigenous Community Coordination Pilot (ICCP) Council of Australian Governments (COAG) trial in the Thamarrurr region of the Northern Territory was the preparation of baseline indicators of social and economic conditions against which subsequent change could be calibrated (Taylor 2004). Given the substantial deficits in economic activity, infrastructure and human capital identified by that exercise, questions were asked by the COAG partners as to the opportunity cost—both to governments and the local community—of sustaining the status quo. This report presents the findings of a study aimed at answering these questions. The study was jointly commissioned by the Northern Territory Government, the Australian Government Department of Family and Community Services, and the Thamarrurr Regional Council. All expenditure data included in the study were provided under the arrangements established for the COAG trial by designated officers of relevant Northern Territory and Australian government departments and agencies, as well as the Thamarrurr Regional Council. They are reported here after verification at source.

CANADIAN ROYAL COMMISSION

The relatively poor social and economic status of the Aboriginal population of the Thamarrurr region represents a cost to the people themselves and to the Australian nation. As an opportunity cost, this can be calculated as the full impost to government of sustaining the status quo of low labour force participation, low employment and occupational status, low income status, low educational participation and outcomes, high housing occupancy rates, high crime and custody rates, and high morbidity and mortality rates against a background of rapidly expanding numbers. Population-based studies of this kind are rare and for a template we are indebted to the model applied in Canada by the *Report of the Royal Commission on Aboriginal Peoples* (Canada Royal Commission on Aboriginal Peoples 1996). Two types of costs were implicit in the Canadian model: costs due to foregone production, and costs due to the remedial actions necessary to compensate for low socioeconomic status as benchmarked against the Canadian average. The purpose of the present study is to establish the nature and value of similar such costs against an assumption that Northern Territory average standards of social and economic participation should apply at Thamarrurr. This assumption is based on the stated aim of Thamarrurr Regional Council to normalise the regional economy and achieve the same living conditions and opportunities as enjoyed generally in the Northern Territory.

COMPONENTS OF OPPORTUNITY COST

One way of looking at opportunity costs is as the gross benefit to be gained from achieving a given target standard. A 'net benefit' thus becomes the gross benefit less the costs of achieving target conditions. Thus, the gross benefit to society generally from Thamarrurr achieving Northern Territory average socioeconomic status, is composed of two parts:

- O , which is the additional output produced at Thamarrurr because the productivity and employment opportunities in Thamarrurr are improved to those for the Northern Territory overall. In opportunity cost language this may also be called the 'output gap', 'loss of output' or the 'output forgone' by not achieving the target; plus
- R , which is the total reduction in remedial costs of the community that follow an improvement in conditions in the region equal to the Northern Territory average. 'Remedial costs' are measured as costs in areas such as job creation, education, housing, health, policing, criminal justice, and income support which are incurred because Thamarrurr has socioeconomic conditions that differ from those prevailing in the Northern Territory as a whole.

Thus, $O + R$ is a measure of the financial benefit to society generally which would occur if the socioeconomic conditions at Thamarrurr were equivalent to the Northern Territory standard. It does not indicate how much it might cost to achieve that target. The bulk of the report is devoted to establishing the values of O and R . The level of output forgone is estimated using data on employment income at Thamarrurr compared to the Northern Territory average, whilst remedial costs are the sum of marginal expenditures made by Northern Territory and Australian government departments on the Thamarrurr population compared to the Northern Territory average.

THAMARRURR OUTPUT FORGONE

Analysis of these costs reveals that the value of output forgone at Thamarrurr amounts to \$43.8 million per annum, while Indigenous employment incomes foregone amount to \$26.3 million per annum. Given an Indigenous resident population of some 2,100 people, this means that if Northern Territory conditions were replicated at Thamarrurr then, theoretically, output per person would increase by about \$22,000 per annum and average employment incomes would increase by around \$13,000 per annum. This assumes, of course, that such output would be similar in composition to that of the Northern Territory, which is unlikely to be the case at Thamarrurr given the limited size of the regional economy combined with the nature of local options and aspirations for economic activity.

THAMARRURR REMEDIAL COSTS

In the Canadian study (see above), it was found that remedial costs due to the lower socioeconomic status of Indigenous peoples were substantially above the national average. That is, Canadian governments spent more per head on the Indigenous population than they did on the population overall. This excess is incurred to assist Aboriginal people to overcome their socioeconomic disadvantage and is the sort of result one would expect in a modern democratic welfare state that has obligations to assist its disadvantaged members.

Remarkably, this result did not apply to Thamarrurr since the total remedial cost was substantially negative (instead of positive) to the tune of \$4 million, or \$1,944 per Aboriginal resident. This means that after accounting for all government dollars and transfer payments expended on residents of the region, far less is spent on them per head than is spent on the average Territorian. Admittedly, this calculation is made exclusive of data on direct spending by DEWR in the Northern Territory that may have raised the deficit higher had the true costs of running the Job Network been factored in. Aside from obvious imbalance in the distribution of former ATSI/S monies, a key factor in this deficit is an apparent gross underspending on education at Thamarrurr of some \$3.2 million largely reflecting low levels of school attendance. While funding for those attending school is marginally higher than the Territory average, the low attendance rate means that for every education dollar spent by governments on the average child of compulsory school age in the Northern Territory, at present \$0.47 is spent on the Thamarrurr equivalent.

TOTAL OPPORTUNITY COST

Bringing the output and remedial costs together, the total opportunity cost for Thamarrurr is estimated to be \$39.8 million per year (\$43.8m minus \$4m). While negative expenditure on remedial costs represents a saving for government, this is ultimately false economy: the proposition here is that negative expenditure on remedial costs results in a much higher level of lost output than if government spending at Thamarrurr were substantially higher. Such additional spending could also improve non-financial aspects of people's living standard in areas such as housing, health, security, and general well-being.

FISCAL IMBALANCE

One might have expected that the remedial costs to government of servicing a growing Australian community that is relatively sick, poorly housed, illiterate, innumerate, disengaged from the education system, on low income, unemployed, and with a sub-standard communications network would be substantially higher (not lower) than the Northern Territory average. What emerges, then, is a structural imbalance in funding at Thamarrurr with lower than average expenditure on positive aspects of public policy designed to build capacity and increase output such as education and employment creation, and higher than average spending on negative areas such as criminal justice and unemployment benefit. This begs a very important question—does the situation of fiscal imbalance actually serve to perpetuate the very socioeconomic conditions observed at Thamarrurr in the first place? If this is so, then clearly discussions between COAG and Thamarrurr around matters of shared responsibility must necessarily address these expenditure issues.

POLICY CHALLENGE

These findings suggest a consequent policy challenge: to reverse the current pattern of overspending on negative areas of expenditure and underspending on positive areas to create a situation of investment in human and physical capital substantially beyond existing levels. To give some idea of just how far beyond in one program area alone, the current functional housing stock in the Thamarrurr region of 144 dwellings would need to increase to 609 dwellings over the next 20 years simply to meet agreed Territory standards in Indigenous housing provision. Thus, it is important to recognise that policy options for addressing the situation are not cost neutral—expenditure will need to grow either to compensate for declining socioeconomic status, or in order to enhance it. Whatever the case, a sizeable fiscal response is unavoidable.

COAG MONITORING

As a COAG trial, the exercise involving the Thamarrurr Regional Council and community, the Northern Territory Government, and the Australian Government has demonstrated some of the possibilities presented by a whole-of-government approach to regional service delivery and policy application. The present study shows that where government effort is consolidated, comprehensive data of relevance to the analysis of regional development issues can be extracted from otherwise discrete administrative systems. Having established this baseline of opportunity costs for the Thamarrurr region, it is vital for the monitoring of government performance that these data collection mechanisms are sustained so as to track the movement of such costs on a routine basis.

INTRODUCTION

As part of its strategic response to the report of the Council for Aboriginal Reconciliation, the Council of Australian Governments (COAG) agreed in April 2002 to identify up to eight communities or regions across Australia to serve as trial sites for Indigenous Communities Coordination Pilot (ICCP) projects aimed at effecting whole-of-government partnership approaches to service delivery with the aim of enhancing social and economic outcomes. These were to be based on a concept of 'shared responsibility' between the Commonwealth, State and Territory governments and communities, with the idea of streamlining government processes and supporting some restoration to local Indigenous populations of responsibility for, and control over, decision making regarding service delivery and general planning for social and economic development.

Because of long-standing discussions between the Northern Territory government and the population of the Wadeye region to the south west of Darwin around the issue of restoring a more customary mode of regional governance (Thamarrurr), the Wadeye community accepted a proposal to become one of these trial sites. Accordingly, the newly-designated Thamarrurr Regional Council entered into a Shared Responsibility Agreement with the Commonwealth and Northern Territory governments in June 2003. The first stated aim of this agreement was to establish partnerships and share responsibility for achieving *measurable* and sustainable *improvements* for people living in the region. The emphasis above is to highlight the fundamental role that measurement of improvement was set to play in establishing the efficacy or otherwise of the trial. This has further import as it is also a stated requirement of the regional planning goals set out in the Northern Territory Government's *Stronger Regions Policy* which was announced later in the same year (Northern Territory Government 2003a; Smith 2004) with the ultimate goal of establishing up to 20 new regional authorities across the Territory.

Bureaucratic processes established under both of these policy initiatives have served to link mutually determined social, economic, and service delivery aspirations with the means to achieve them and assumed responsibilities. Significantly, these are codified in a negotiated regional development plan, and subject to a (as yet unspecified) process of evaluation and monitoring against measurable outcomes. An initial step in preparing for such evaluation was the preparation of baseline indicators of social and economic conditions against which subsequent change can be calibrated (Taylor 2004). Given the substantial deficits in infrastructure and human capital identified by that exercise, the question was asked by the COAG partners as to the opportunity cost—both to governments and the local community—of sustaining the status quo.

TERMS OF REFERENCE

The terms of reference guiding this research are drawn from separate (though related) contractual arrangements between the Northern Territory government's Office of Indigenous Policy (OIP) and the Australian government's Department of Family and Community Services (DFACS) and the Centre for Aboriginal Economic Policy Research (CAEPR), as well as between OIP and James Cook University (JCU). In concert with, and with reference to, the population of the Thamarrurr region, these arrangements require CAEPR and JCU to estimate the opportunity cost of the status quo to the nation, government, and the Thamarrurr population with reference to the following:

- Estimate how much Aboriginal people would earn if they were employed more productively and in larger numbers;
- Estimate the cost of foregone production due to low educational status;
- Estimate the loss of tax revenue due to the status quo in employment and earnings;

- Estimate the remedial costs of providing housing subsidy, health care, social and income support, and police and correctional services;
- Estimate future costs based on sustaining/changing the status quo;
- Contribute to the governance capacity of Thamarrurr Regional Council by providing a comprehensive set of costs and benefits of various planning scenarios;
- Contribute relevant information to the national evaluation of ICCP; and
- Encourage forward thinking in the assessment of ICCP policy options and responses to development planning in the Thamarrurr region by highlighting the potential impact of government spending as investments with future social and economic return.

BACKGROUND

The relatively poor social and economic status of the Aboriginal population of the Thamarrurr region as quantified by Taylor (2004) represents a cost to the people themselves and to the Australian nation. As an opportunity cost, this can be calculated as the full impost to government of sustaining the status quo of low labour force participation, low employment and occupational status, low income status, low educational participation and outcomes, high housing occupancy rates, high crime and custody rates, and high morbidity and mortality rates against a background of rapidly expanding numbers. Following the model applied in Canada by the *Report of the Royal Commission on Aboriginal Peoples* (Canada 1996), two types of costs are implicit here: costs due to foregone production, and costs due to the remedial actions necessary to compensate for low socioeconomic status. In response to the Terms of Reference, the purpose of this study is to establish the nature and value of these costs against an assumption that Northern Territory average standards of social and economic participation should apply.

Few studies in Australia have focused in this way on population-based socioeconomic status as a platform for opportunity cost analysis. Interestingly, the few examples that do exist refer specifically to the Indigenous population but they are national in scale and sectoral in approach including consideration of the fiscal implications of low labour force status (Hunter & Taylor 2002; Stanley 2004; Taylor & Hunter 1998) and the adequacy of public expenditure on Indigenous people in the areas of health, housing, education and employment services (Neutze, Sanders & Jones 1999; Deeble et al. 1998). In terms of key findings, these studies have shown that:

- The overall cost to government of labour force status in terms of income support payments and foregone tax revenue could be as high as 0.5 per cent of Australia's Gross Domestic Product (GDP) (Hunter & Taylor 2002);
- The savings to government from a person gaining employment are very substantial and could justify substantial government expenditure on employment creation programs (Stanley 2004); and
- Indigenous people benefit substantially more than other Australians from specific special programs, but they benefit substantially less from many, more general program expenditures (Neutze, Sanders & Jones 1999), especially when consideration of their relative status vis-a-vis other Australians is taken into account, for example in terms of health status (Deeble et al. 1998).

In addition to these Australian findings, New Zealand economists have examined the relatively disadvantaged economic status of Maori people (Dalziel 1991). Most notably, Douglas and Dyal (1985) observed that Maori were over-represented in some areas of government expenditure (e.g., policing, justice, and unemployment benefit) and

under-represented in others (e.g., education and superannuation). They noted that the first set of expenditures comprise examples of 'negative funding' needed to address crime and poverty etc., whereas the second set represents 'positive funding' designed to build capacity and enhance opportunity. This led to two questions:

- How much would the government save if the amount of negative funding on the Maori population was proportional to that spent on the rest of the population?
- How much extra would it have to pay if the positive funding were similarly proportional?

For Douglas and Dyall, the sum of the two amounts produced a measure of Maori economic underdevelopment. These are essentially the questions posed by the Terms of Reference for the present study.

THE STATUS QUO IN THE THAMARRURR REGION

Taylor (2004) has developed a comprehensive baseline profile of the social and economic status of the population resident within the Thamarrurr Regional Council area. For the present study, the value of this profile lies in providing measures of the size of the gaps between regional social indicators and a set norm (in this case Northern Territory averages). With these, estimates of costs due to foregone production and costs due to remedial action can be established. The salient features of the Thamarrurr population are summarised below.

DEMOGRAPHY

The current resident population of the region is around 2,200, comprised overwhelmingly of Aboriginal families together with a mostly revolving cadre of adult non-Indigenous residents. The Aboriginal component is an expanding population with high growth momentum, that is committed to country (undeniably mobile, but not overtly migrant), and which is likely to produce a doubling of the population within a generation, leading to the emergence of the Territory's fourth largest town by 2023.

The overriding demographic characteristic is high Aboriginal fertility resulting in a sustained high proportion of infants and children. While the big unknown in this demographic equation remains net migration, it does appear that individuals born within the region conduct their affairs and pass through life mostly in situ. This demographic stability reflects, in part, the strength of cultural continuity and a desire and growing capacity to sustain chosen lifestyles within the region.

Aboriginal population totals projected to 2023 for the Thamarrurr region are shown in Table 1 by five-year age groups. Overall, by 2023, the Aboriginal population is projected to increase at a compound rate of 3.3 per cent per annum to reach a population of 3,833, an increase of approximately 1,800 persons. If we add to this a ratio-based estimate of the future non-Aboriginal population of 212, this produces a total usual resident population projection of 4,045 by 2023. Thus, within a generation, Wadeye and its associated outstations will have a population greater in size than present-day Nhulunbuy, a mining town in north-east Arnhem Land. However, for core funding purposes it is more appropriate to employ a service population estimate. This is more difficult to project, but if an assumption is made that the service population will grow at the same rate as the usual resident population then we can estimate an overall service population for the region in 2023 of 4,470 (Taylor 2004).

The significance of these age data for policy is best revealed by grouping them into age ranges that typically form the target of policy intervention. These are shown in Table 2. Thus, infant years leading up to school age are those aged 0–4 inclusive. Compulsory school age ranges from 5 to 15 years inclusive. The transition years from school to work are indicated as 15–24 years, while the prime working age group is identified as ages 25–54. Typically in the Australian workforce, and in International Labour Organisation (ILO) convention, working age extends to 64 years with those over 65 years representing the aged and pensionable. However, given the evidence for premature ageing in the Thamarrurr population, this has been set here at the earlier age of 50+ years.

From these data it can be seen that, numerically, much of the future growth will occur among those of compulsory school age and working age, although the highest rate of growth will occur amongst the aged. Also evident is the fact that, given the continuing large numbers at the base, considerable population momentum will remain for further growth beyond the 20-year projection period shown here. Thus, the only factors that might undermine sustained population growth for probably the next two generations are the prospect of an increase in mortality due to a rise in the incidence of lifestyle diseases, a substantial decline in fertility (and, of course, associated major

Table 1. Five year population projections: Aboriginal population of the Thamarrurr region, 2003 to 2023

Age	2003	2008	2013	2018	2023
0-4	350	414	494	570	642
5-9	277	348	412	492	567
10-14	303	276	348	411	491
15-19	244	303	277	348	412
20-24	198	240	298	272	342
25-29	143	195	236	293	268
30-34	127	140	191	232	288
35-39	114	123	135	184	224
40-44	78	109	117	129	175
45-49	72	73	101	109	120
50-54	38	66	67	93	100
55-59	26	34	60	61	84
60-64	26	22	29	51	52
65-69	15	21	18	24	41
70-74	8	11	16	13	18
75+	15	9	8	9	9
Total	2,034	2,384	2,807	3,291	3,833

Source: Taylor 2004.

Table 2. Distribution of Aboriginal population by select age groups: Thamarrurr region, 2003 and 2023

Age group	2003	2023	Net change	Per cent change
0-4	350	642	292	83.4
5-15	626	1,140	514	82.1
16-24	396	672	276	69.7
25-49	534	1,075	541	101.3
50+	128	304	176	137.5
Total	2,034	3,833	1,799	88.4

Source: Taylor 2004.

change in social behaviour), or population loss to due to permanent migration out of Thamarrurr. At the time of writing, the first of these scenarios seem possible, while the last two seem unlikely.

Clearly, unlike the many declining country regions across non-metropolitan Australia, the Thamarrurr region is rapidly expanding in population size. Unless a major upgrading occurs, this trajectory means that Wadeye (along with many of the predominantly Aboriginal towns across the Top End) will be increasingly anomalous in

the Australian settlement hierarchy as a vibrant and growing medium-sized country town with almost none of the basic infrastructure and services normally associated with such places. Across northern Australia, there does appear to be a significant structural break in terms of the range and number of services and functions available in settlements of up to 2,000 population as opposed to those between 4,000 to 8,000 (Hugo et al. 2001).

JOBS AND ECONOMIC STATUS

Less than one-fifth of all Aboriginal adults in the Thamarrurr region are employed, and the vast majority of these are tied to the Community Development Employment Projects CDEP (scheme) (Table 3). Aboriginal people occupy less than half of the 130 or so jobs outside of CDEP. As for those not in work, 40 per cent of adults may be classified as unemployed in so far as they are in receipt of Newstart Allowance—albeit not subject to activity testing—while slightly more again are outside of the labour force altogether. The result is that 82 per cent of Aboriginal income is sourced from welfare payments. Of the estimated \$4 million in personal income from mainstream employment, only 16 per cent of this goes to Aboriginal employees. Viewed historically, it is likely that Aboriginal people are less likely now to be participating in the workforce than in previous generations. Of particular note is the fact that 45 per cent of those who are not in the workforce, and 35 per cent of the unemployed, are in the 15–24 age group.

Table 3. Actual levels and rates of labour force status for Aboriginal residents of the Thamarrurr region, 2003

Employed		Unemployed	Not in the labour force (NILF)	Total 15+
CDEP	Other			
Levels				
133	45	449	477	1,104
Rates (%)				
12.0	4.1	40.7	43.2	100.0

Source: Taylor 2004.

EDUCATION AND TRAINING

Poor employment outcomes for Aboriginal people in the region are to a large degree tied to poor educational status. It remains the case that not all of those in the current school age group are enrolled. In 2003, only half of the region's school age population was enrolled at school, and only half of those enrolled actually attended classes, and even then mostly on an irregular basis. This low level of commitment to school attendance in the region is reflected in minimal retention to post-primary years with less than one-fifth of teenagers of compulsory school age estimated to be attending classes. In effect, only a handful of school leavers enter working age with high school level achievement and skills.

Likewise, the very low participation in Certificate level Vocational Education and Training (VET) courses means that the vast majority of Aboriginal adults in the region are likely to be left uneducated, unqualified, unemployed, or underemployed on CDEP, and effectively marginalised in the face of any competition for jobs from more qualified countrymen or outsiders.

HOUSING AND INFRASTRUCTURE

Wadeye fails to match the levels of infrastructure development and housing adequacy that are normally associated with Australian settlements of equivalent size. With housing for Aboriginal residents initially provided under a mission regime and now by the Thamarrurr Council, supply is entirely program-driven and falls far short of demand. Currently, the occupancy rate is 16 persons per functional dwelling, with the cost of meeting agreed standards in housing occupancy estimated at \$52 million (Taylor 2004: 101). In addition to this is a need to ensure that adequate maintenance funds are available and sufficient to ensure minimum environmental health standards, while expansion in the housing stock will be necessary to accommodate new household formation in a rapidly growing population.

HEALTH STATUS

With reference to just one statistic—median age at death (which currently stands at 46 years for Aboriginal people in the Daly Statistical Local Area (SLA))—the physical limitations on prolonged and full participation in the workforce become all too apparent. If we add to this the fact of relatively high morbidity rates commencing in the mid-30s and rising throughout the prime working ages, then a pattern emerges of severe physical constraints on the ability of many in the community to engage in meaningful and sustained economic activity. This has implications for earning capacity and is reflected in 'lifetime lost income' which provides one means by which the economic costs of health status can be measured. There is also the prospect that many individuals do not seek work or reduce their hours of work due to responsibilities in caring for sick relatives.

The mortality rate can be used as a proxy measure of health status. While the usual residence of Aboriginal people is recorded in death statistics held by the Australian Bureau of Statistics (ABS) these are coded only to the SLA level. In the case of Thamarrurr, this refers to the Daly SLA. Between 1997 and 2001, a total of 88 Indigenous deaths were officially recorded for this area—59 male and 29 female. With these data, it is possible to calculate a standardised Aboriginal mortality ratio for the Daly SLA to account for the quite different age structure of the Aboriginal population compared to the standard. The assumption here is that the resulting rate would be very similar to that calculated for Thamarrurr, if such a calculation were possible. However, given the relatively small size of the Aboriginal population in the Daly SLA, and the consequent unreliability of age-specific death rates, indirect standardisation is applied and produces an indirect standardised mortality ratio for the Aboriginal population of 3.6, indicating in excess of three times more Aboriginal deaths in the region than would be expected if the mortality profile observed for the total Australian population applied (Taylor 2004: 77–8). In terms of an indirectly standardised Aboriginal death rate for the Daly SLA, this translates into 24 deaths per 1,000, which is 18 per cent higher than the equivalent indirect rate of 20 deaths per 1,000 calculated for Aboriginal people in the Northern Territory as a whole (Table 4), with higher male mortality accounting for all of this difference. Compared to the total non-Aboriginal population of the Northern Territory, overall Aboriginal death rates in the Daly SLA are four times higher. The comparable figure for all Aboriginal people in the Territory is 3.4 times higher. It is not surprising, then, to discover that the median age at death for Aboriginal people in the Daly SLA was only 46 years.

Table 4. Aboriginal and non-Aboriginal indirect standardised death rates^a for the Daly SLA and Northern Territory, 2001

	Male	Female	Total
Aboriginal Daly SLA	38.2	12.2	23.8
Aboriginal Northern Territory	27.2	14.5	20.2
Non-Aboriginal Northern Territory	N/a	N/a	6.0

a. Per 1,000 head of population.

Source: Taylor 2004: 78.

Among the issues underlying health status, the profile emphasises the significance of on-going backlogs in achieving adequate environmental health infrastructure (including a reduction in overcrowded dwellings), a continuing gap between ideal and actual staffing levels in health personnel, and difficulties in achieving better nutritional status in the population given the high cost of food and low incomes.

CRIMINAL JUSTICE

A pressing issue for Thamarrurr is the degree to which past and present convictions and interaction with police, courts and prisons influence individual chances of participating successfully in the regional society and economy as defined by the goals and objectives of the ICCP partners. While limited by data availability, the profile yields an estimate of the population for whom contact with the police and a criminal conviction might represent a barrier, or at least a brake, on social and economic participation. What emerges is a picture of some 10 per cent of adults aged under 30 years (almost all male) who are in custody at any one time. Many of these are repeat offenders, and while custody rates decline with age, feeding into this group is a larger number of juvenile offenders and even more children of primary school age who essentially experience an apprehension-free apprenticeship into recidivist behaviour.

The main thrust of research into underlying causes of such behaviour among Aboriginal youth in remote communities emphasises the futility of custody in circumstances where the normal progression from school to paid work is the exception rather than the rule (Ogilvie & Van Zyl 2001). While the educational profile of offenders recorded in official crime statistics appears to be in line with the general Thamarrurr profile, one can't help but postulate at least some link between the lack of participation in schooling observed in the region, the low level of youth labour force participation, and the scale of youth participation in recidivist activity.

As Ogilvie and Van Zyl (2001: 4) point out, if an individual's most defining experience of growing up is primarily about custody, including gang allegiance in the case of Wadeye (Ivory 2003), then it would seem unlikely that such an experience would equip young males for lives outside of criminal sub-cultures. In pursuing this theme, Ogilvie and Van Zyl call for a reconsideration of expenditure involved in incarceration in favour of facilitating less destructive modes of growing up (Ogilvie & Van Zyl 2001: 5). To this extent, continued poor school attendance and failure to engage youth economically 'to satisfy their need for more than just boredom and marginalisation' (Ogilvie & Van Zyl 2001: 5), represent clear opportunity costs to both government and the regional community.

THE CONCEPTUAL FRAMEWORK

As in the case of decision making for all communities, decisions in relation to the provision of resources to Indigenous communities should be made in relation to three criteria:

- *Rights as a citizen:* All citizens of Australia are entitled to at least a minimum standard of living in terms of health, education, housing, employment opportunities, personal security and so on. While there is no universally agreed set of minimums, there is agreement that these minimums exist and that they should apply to Indigenous communities as well as mainstream society.
- *Equity or fairness:* Resources should be provided to Indigenous communities and in such a way that a minimum level of equity or fairness is achieved within communities and between Indigenous communities and the non-Indigenous community.
- *Efficiency:* Governments typically examine funding proposals in terms of their economic efficiency. That is, they ask whether the proposal will add to society's benefits more than it adds to society's costs. This process is now applied to areas such as health where they were not applied before.

This report is primarily concerned with the efficiency of a proposal to undertake a program to raise the socioeconomic status of Indigenous people in the Thamarrurr region to a more 'normal' level for Australian citizens. The whole ethos of the Thamarrurr leadership in engaging the Commonwealth and Northern Territory governments in a partnership approach to social and economic development is, in their own words, to bring about 'normalization' of the economy of the Thamarrurr region (Thamarrurr Regional Council 2005). This term, which is now part of the lexicon of this particular COAG trial, begs the question as to what 'normal' might constitute and how it may be gauged. This issue is addressed below within the framework of establishing opportunity costs.

MEASURING COSTS AND BENEFITS

The efficiency of decisions in relation to such issues as the provision of resources to communities is generally decided on the basis of a comparison of costs and benefits. These costs and benefits are more correctly called 'social costs' and 'social benefits' and are the costs and benefits which all of society experiences, not just those experienced by the people directly involved. If benefits exceed costs then there is an (efficiency) argument in favour of the project. Apart from situations where there are 'external' costs in the form of environmental damage and the like, or where there are joint costs, the task of measuring the costs to society (Australia) of the provision of goods and services is, on the whole, relatively easy to do. The measuring of the economic benefits to society, however, is often difficult. Economists generally value benefits, sometimes only in principle, by asking 'how much are people willing to pay' for the benefit and rely on markets to provide that value. In Indigenous communities, this approach is often difficult to apply because many goods are either free or their prices do not reflect costs, and because there are substantial downstream benefits of the consumption of the commodity, while these in turn cannot be valued.

This point can be illustrated by examining the example of a proposal to build additional houses in a community. If we were considering building additional houses in a town with a standard of living about equal to the national average, then the benefit would be measured by the amount people are prepared to pay for the extra houses. In the case of a poor community such as Wadeye, however, a number of different factors are relevant. The average occupancy rate of houses in Wadeye is 16 persons, with over 20 persons in some dwellings (Taylor 2004). In such

cases, the benefits to the community of providing additional houses is far beyond what the residents of Wadeye would or could pay. Families in crowded houses experience the following problems:

- Health problems because of inadequate waste water disposal, sharing of sleeping spaces, difficulties in maintaining personal and house cleanliness, and overcrowding;
- Poor sleep resulting in poor work performance;
- Children and adults being unable to study; and
- A low level of amenity from the house because the high occupancy causes the need for maintenance, the provision of which is always inadequate.

The conventional economics approach to measuring the benefits from the provision of extra housing is to measure the economic benefits from the reduction in these problems. That is, the researcher would attempt to measure the amount of decline in these problems and assign financial values to these. Thus, an attempt would be made to measure the reduction in health costs, increased in output and income from increased work performance and work skills and education, reduction in the costs of policing and criminal justice, and so on. In practice, this is not possible for two reasons. First, there is no simple, measurable relationship between improved housing and the decline in these problems. Secondly, assigning financial values to these is simply too difficult.

The same difficulties arise if the researcher is attempting to measure the benefits from an improvement in the provision of, say, health service delivery. Apart from allowing people to enjoy life more and live longer, such expenditure will have a range of downstream benefits which impact on work readiness, education, domestic peace, et cetera. Indeed, these difficulties arise in relation to measuring benefits of any expenditure in an Indigenous community. The effect of these difficulties is that the conventional cost-benefit approach has been of little use for these communities.

THE OPPORTUNITY COST OF THE STATUS QUO

Because of these and other research problems, the *Canadian Report of the Royal Commission on Aboriginal Peoples* (Canada 1996) used a different approach to measuring the benefits from improving the socioeconomic status of Aboriginal Canadians. Rather than attempting to measure the benefits of additional expenditure in each of the areas of housing, health, education, et cetera, the Commission calculated the benefits that would flow from raising the socioeconomic status of Canadian native peoples from its existing level to the average for all Canadians. The assumption used was that if policy was undertaken so that the socioeconomic status of Aboriginal people was raised to equal the average for all Canadians then there would be two types of benefits:

- a) The income and productivity of Canadian Aborigines would increase to equal that of the Canadian average; and
- b) The remedial expenditures (those which are designed to assist Aborigines cope with disadvantage, which were estimated as the difference in per capita expenditures between those on Aboriginal Canadians and the averages for all Canadians) would be unnecessary and would fall to zero. The benefit is the sum of these expenditures saved.

Thus the total 'benefit' to society of the improving the socioeconomic status of Canadian Aborigines to equal the Canadian average is the sum of (a) and (b) above.

The total benefit can be described in various ways: as the 'opportunity cost of the status quo' where the 'opportunity cost' is the return forgone by not doing something; as the cost of continuing with existing policies; as the cost of not improving the socioeconomic situation; or as the return that will be gained by improving the target socioeconomic status so that it becomes equal to the national average.

This type of study only considers part of the argument for improving Indigenous people's conditions. It answers the question: 'how much does it cost if you continue to do what you are doing now?' by comparison with achieving a higher standard. It says this: 'it costs society \$x million by not achieving a given standard, and thus society can afford to pay up to \$x million to achieve that standard without net loss'. The study does not estimate the costs of achieving the higher standard, nor does it indicate the best way of achieving that standard.

This report applies the Canadian Royal Commission's method to the Thamarrurr region.

ADVANTAGES OF THE OPPORTUNITY COST APPROACH

The opportunity cost approach as applied by the Canadian Royal Commission has a number of advantages and these apply equally well in Australia.

Interdependencies of benefits and costs

Because Indigenous communities are very small and people are closely interconnected, all events and outcomes are interrelated. It is therefore difficult to isolate, for measurement purposes, benefits or costs of an action to particular people or areas. The 'whole-of-community' approach which the Royal Commission uses avoids these problems by supposing that conditions are improved in all areas and that the outcomes are the same as those in the assumed 'normal community' for which outputs, incomes et cetera have been measured.

Whole-of-government approach

The opportunity cost method puts emphasis on the need to create improvements in the socioeconomic status of the community rather than on actions by particular departments or actions under specific programs. For example, it looks at the task of 'improving education' as a function of increased expenditure in a number of related areas such as school facilities, health, housing, diversionary programs etc., rather than 'building a new school room' alone. Thus the achievement of an improvement in education outcomes will require a number of departments to work together. This approach requires policy makers to examine the fundamental issues rather than the more narrow confines of departmental responsibility. In this way, greater improvements in the communities may ensue. This approach is also consistent with COAG's aims.

Government expenditures as investment

Another advantage of the opportunity cost approach is that it requires government expenditures on health, education, housing, job creation and welfare in the communities to be assessed in the appropriate way. It is usual to consider these expenditures as recurrent costs and hence an unambiguous burden on society which needs to be minimised. The opportunity cost approach, however, results in these expenditures being seen as investments. Thus, the return from the existing level of expenditures is the existing socioeconomic status of the community. An increase in these expenditures—an increase in investment—will improve the socioeconomic status of the community, and will lead to returns in the form of increases in output and incomes and reduction in expenditures on remedial programs. Conversely, a reduction in government expenditures on the community will cause a decline in the community's socioeconomic status and a reduction in benefits to society in the form of reduced output, lower incomes, and an increase in remedial expenditures. From this it is clear that the common downward pressure

on government expenditures on communities is irrational. Whether these expenditures should be increased or decreased should be determined on the basis of the returns which flow from them.

DEFINITION OF THE TARGET CONDITIONS

An opportunity cost study of this type requires a comparison between the studied community and a target community or set of conditions. In order that the study be policy relevant, the 'target' must be both desired by the community and achievable. In the foreword to Taylor (2004), the Thamarrurr Regional Councillors indicated that the goal of the community was 'to have the same living conditions and opportunities as normal Australians'.

'Normal Australians' in this context has a number of reasonable interpretations, and three are explored here:

- The average conditions for the Northern Territory;
- The average for Indigenous people in the Northern Territory; and
- Conditions prevailing in a town of similar size in remote Australia.

While comparison between Wadeye and average Northern Territory conditions may seem far-fetched in terms of practical application, this is the comparison for which most data are available and is thus the one deployed for analysis. In any event, it is also closest in equity terms to the sentiment of Thamarrurr Regional councillors when they refer to 'normal Australians'. The average for Indigenous people in the Northern Territory is no doubt closer to what is actually achievable at Wadeye, but other Indigenous people in the Northern Territory are themselves relatively disadvantaged in relation to normative standards and so such a comparison is largely futile in terms of assessing overall equity goals. Likewise, conditions in a town of similar size in remote Australia might be viewed as a reasonable benchmark, but this is only included here for exploratory purposes as a preliminary attempt to locate the profile of Wadeye in the overall context of the Australian settlement hierarchy.

To develop this last point further, from Table 1 it is clear that, unlike many declining country regions across non-metropolitan Australia, the Thamarrurr region is rapidly expanding in population size. Unless a major upgrading occurs, this trajectory means that Wadeye (along with many of predominantly Aboriginal towns across the Top End of the Northern Territory) will be increasingly anomalous in the Australian settlement hierarchy for being a vibrant and growing medium-sized country town yet missing significant elements of basic infrastructure and services normally associated with such places due to its legacy of mission, and then Aboriginal community-funding regimes. To shed some preliminary light on this issue, the town of Longreach in central west Queensland is selected as a benchmark.

Longreach is a small service centre classified according to the ABS remoteness index as 'very remote', as is Wadeye. Thus, like Wadeye, it is physically distant from other population centres and so from the full range of goods and services that such access provides. It also happens to be the only Australian town with a very remote classification that has a population size similar to that projected for Wadeye and its region by 2023. Presently, the estimated resident population of Longreach and its Shire is stable at around 4,300 which places it in a category above Wadeye within the north Australian settlement hierarchy in terms of the range of services and functions it provides and performs (Hugo et al. 2001). However, these similarities of location and (future) size raise the question of what socioeconomic status, infrastructure and services are presently found at Longreach and what these might mean for likely future services and functions at Wadeye if it is to reach a comparable population over the next 20 years.

Table 5. Services and functions at Longreach and Wadeye

Longreach	Wadeye
Child care centre	yes
Youth centre	yes
Public swimming pool	School only
Cinema	no
Library	yes
Public toilets	yes
Cultural centre, museum	yes
Primary school	yes
Boarding school	no
High school	no
TAFE	no
Aged care facilities	yes
Social clubs	no
Sporting clubs	no
Police station	yes
Fire service	no
Ambulance service	limited
Magistrate	no
Newspaper	no
Radio reception	yes
TV reception	satellite only
Public phone	yes
Mobile phone reception	no
Centrelink office	yes
Sealed urban roads	some
Sealed access roads	no
Wet weather road access	no
Hospital	no
Pharmacy	no
Retail outlets	very limited
Adequate housing	no

Sources: Longreach Shire Council, Thamarrurr Regional Council.

Table 5 provides a very basic qualitative assessment of the difference in urban services and functions in the two settlements, though with no measure of any gaps in quality. However, even this simple analysis uncovers some of the shortfalls that Wadeye might expect to make good as it proceeds along its path to a higher population threshold within the settlement hierarchy.

CALCULATION OF THE TOTAL OPPORTUNITY COST OF THE STATUS QUO

In the present context, the term 'opportunity cost' is a cumbersome and possibly confusing concept. As an alternative we may refer to the 'gross benefits to be gained from achieving a given target standard'. A 'net benefit' thus becomes the gross benefits less the costs of achieving target conditions.

Building on the Canadian Royal Commission's approach, and changing the terminology, the gross benefits to society generally from Thamarurr achieving the Northern Territory average socioeconomic target is composed of two parts:

- O , which is the additional output produced at Thamarurr because the productivity and employment opportunities in Thamarurr are improved to those for the Northern Territory overall—in opportunity cost language this may also be called the 'output gap', 'loss of output' or the 'output forgone' by not achieving the target.

Plus

- R , which is the total reduction in remedial costs of the community which follow an improvement in conditions in the region so that they equal the Northern Territory average. 'Remedial costs' are measured as costs in areas such as job creation, education, training, housing, health, policing, criminal justice, and income support which are incurred because Thamarurr has socioeconomic conditions that differ from those prevailing in the Northern Territory as a whole.

Thus $O + R$ is a measure of the benefit to society generally which would occur if the socioeconomic conditions were raised (or lowered, depending on the variable) to the Northern Territory standard. They do not indicate, of course, how much it could cost to achieve that target.

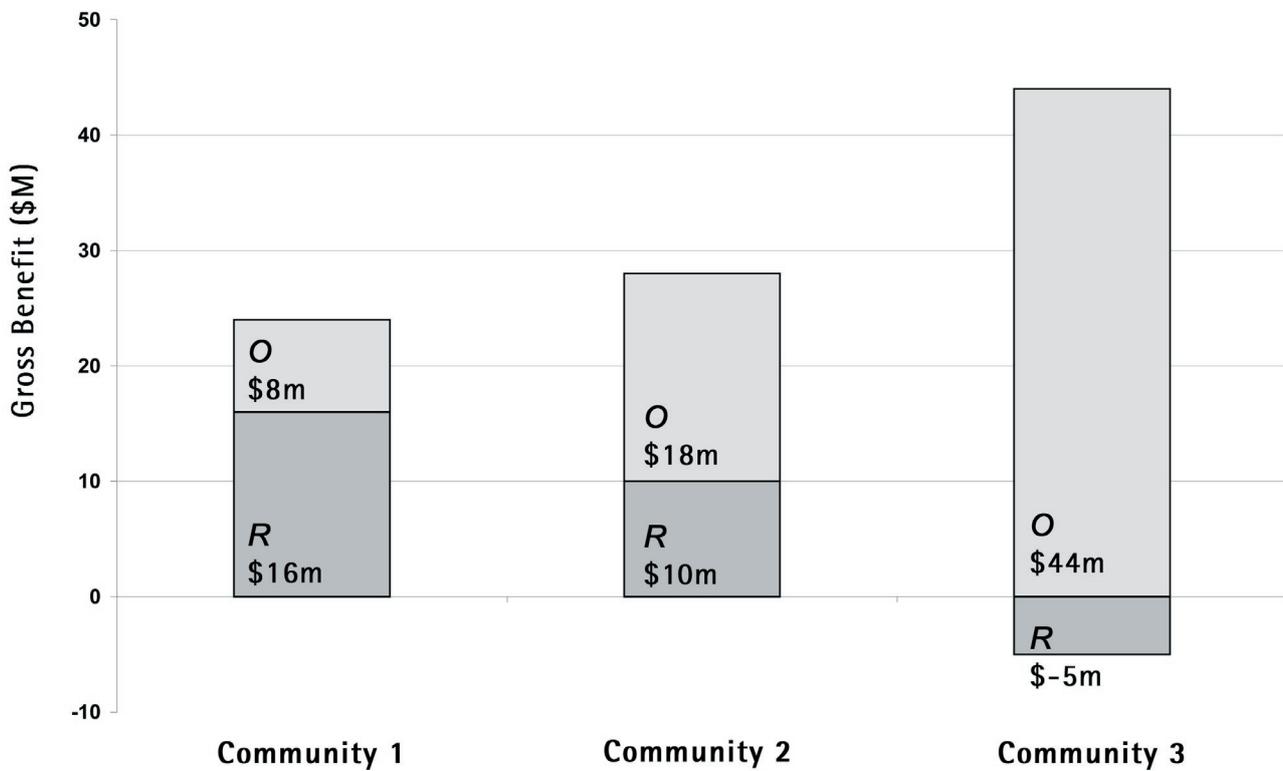
Fig. 1 uses examples of three hypothetical communities to illustrate the calculation of the gross benefit to society. In these examples, it is assumed that the communities have the same population and that expenditure on health, education and training, housing, and other programs increases people's labour force productivity and allows better paying jobs to be created in a community.

In Community 1, governments invest and spend \$16 million per year in remedial programs (R): that is, \$16 million more than if this community was treated the same as the Northern Territory average. This relatively high level of support results in the community having a relatively productive workforce with improved levels of employment income. Thus the value of output (O) of this community is only \$8 million per year below what it would be if the employment rate and productivity were equal to the Territory average. The total gross benefit of improving conditions at this community so they are equal to the Northern Territory average is therefore \$24 million per year.

In the case of Community 2, the government spends less on remedial programs, only \$10 million, and consequently the labour force is less productive than that of Community 1. This causes a loss of output of \$18 million by comparison with what it would be if conditions were equal to the Northern Territory average. Thus the total gross benefit of improving the conditions to equal the Northern Territory average \$28 million per year.

In the case of Community 3, governments spend less per head on this community in their programs than the per capita Northern Territory average, notwithstanding the prevailing socioeconomic conditions. While this saves the government \$5 million in terms of program expenditures, it causes employment outcomes to be substantially worse than in Community 2. Thus the loss of output is now \$44 million, and the total gross benefit from improving the conditions at this community to equal the Northern Territory average is \$39 million per year.

Fig. 1. Calculation of total gross benefit to society of improving conditions to equal the Northern Territory average: hypothetical community cases



Most of the rest of this report is concerned with measuring *O* and *R* at Thamarrurr, beginning with estimates of the increases in earned income and output which would follow an improvement in conditions to equate with the Northern Territory average.

TYPES OF GOVERNMENT EXPENDITURE

The example above assumes that the output of a community will increase as government expenditure in a community is increased, and that the increase in output more than offsets the extra government expenditure. In reality, it is likely that as government expenditure increases further, the increase in output will become less than the extra cost to government of achieving that extra output. Fig. 1 further suggests that the highest returns from additional government spending will be gained by investing in the type of community represented by Community 3—communities that receive the least government support.

The way in which additional government expenditure leads to an increase in output depends on the type of government expenditures. Any government expenditure in or for a community normally has three impacts: 'demand creation', 'support', and 'investment'.

An expenditure has a *demand creation* impact if it leads to an increase in demand for goods and services in a community. All social security payments, and subsidies and payments for activities which lead to local jobs have this effect. Funding for infrastructure and housing developments, funds for direct local employment in schools,

local expenditures by school employees, and all local expenditures of Centrelink payments are of this type. These expenditures, by increasing aggregate demand in the community, create the potential for the value of output for the community to increase. The purchase of goods or service for the community in Darwin, for instance, will not have a demand creation effect.

An expenditure will have a *support* impact if it directly raises the standard of living of people in the community who would otherwise be very poor. It includes items such as Centrelink payments and expenditure on housing and health.

An expenditure has an *investment* impact if it increases the productive capacity of the community. While expenditure on health and housing do this, the major expenditures of this type are in education and training, road construction, purchase and construction of plant and equipment, and so on.

The strength of the relationship between increased government spending (and increasing the level of remedial expenditures) and the increase in output (reduction in output forgone) depends on the nature of government expenditure in terms of the above impacts. For a given level of government expenditure, or level of remedial expenditure, the greater the balance in favour of expenditures which have strong demand creation and investment impacts, the greater will be the increase in community output with the increase in government expenditure. Ideally, government expenditures in communities such as Thamarrurr should be of this type.

INCOME AND OUTPUT GAPS

In this section, estimates are provided of the increases in Indigenous employment incomes and output which would occur at Thamarrurr if conditions there were improved to equal those of given target standards. These estimates can also be described as the income and output 'gaps' resulting from the fact that the socioeconomic status of the Thamarrurr community is poorer than a given standard. The output gap corresponds to Δ in Fig. 1 above.

THE INCOME GAP USING THE NORTHERN TERRITORY AVERAGE

When comparing Thamarrurr to the Northern Territory overall, the question arises: what would Thamarrurr employment incomes be if employment conditions there were the same as those for the Northern Territory average, and what is the 'gap' between those incomes? This gap is caused, in immediate terms, by the fact that employment income per worker is much lower in Thamarrurr than the Northern Territory average, and because the labour force participation rate for Thamarrurr is also much lower than for the Northern Territory overall. These circumstances are, in turn, determined by a range of conditions, including the level of economic activity at Thamarrurr as well as employment practices, and the work readiness of the labour force.

The increase in the value of Thamarrurr incomes if employment conditions were the same as the Northern Territory average can be derived using the following data:

- The average employment income per employed person at Thamarrurr is \$11,550 (including CDEP incomes) (Taylor 2004). By comparison, the equivalent for the Northern Territory is \$38,108 (2001 Census).
- The employment rate (those employed as a proportion of the population 15 years of age and older) for Thamarrurr is 16.1 per cent (including CDEP workers). The equivalent figure for the Northern Territory is 67.3 per cent (2001 Census).
- The Aboriginal population in the Thamarrurr region aged 15 years and older is 1,104 (Taylor 2004).

Thus:

- If the Thamarrurr region had an employment rate equivalent to the Northern Territory average there would be 743 people employed ($1,104 \times 0.673$).
- If those people received employment incomes equal to the Northern Territory then Thamarrurr income would be equal to \$28,313,939 ($743 \times \$38,108$).
- Actual total earned incomes at Thamarrurr for 2003 was \$2,052,943 ($1,104 \times 0.161 \times \$11,550$).
- This means that employment incomes at Thamarrurr would (theoretically) increase by \$26,260,996 per annum if employment conditions were improved to become equal to the Northern Territory average. This may also be called the gap in employment income. This assumes, of course, that such output would be similar in composition to that of the Northern Territory, which is unlikely to be the case at Thamarrurr given the limited size of the regional economy combined with the nature of local options and aspirations for economic activity.

It should be noted that the gap in employment income is not the same as the Thamarrurr/Northern Territory gap in disposable income. That is, if the increase in employment income by \$26.3 million could be achieved, the

actual increase in disposable income for the community would be less than this figure because there would be a reduction in unemployment benefits, family tax benefits, and other benefits.

The calculation of the gap between the total earned incomes which the Thamarrurr community would receive if they enjoyed the same employment conditions as the Northern Territory average, and what they actually receive because of their employment conditions being worse than the Northern Territory average, is summarised in Table 6.

	Thamarrurr	NT average
Average employment income per employed person per annum	\$11,550	\$38,108
Employment rate (% of persons 15+ years)	16.1%	67.3%
Thamarrurr population 15+ years	1,104	
Thamarrurr employment number at the NT employment rate	743	
Thamarrurr total employment incomes if paid and employed at NT rates	\$28,313,939	
Actual Thamarrurr employment incomes	\$2,052,943	
Increase in Thamarrurr employment incomes if paid and employed at NT rate	\$26,260,996	

THE OUTPUT GAP USING THE NORTHERN TERRITORY AVERAGE

The Canadian Royal Commission's study calculated the increase in output which would follow an improvement in employment conditions in the following way: it observed that 61 per cent of the Canadian GDP is composed of employment income, and then applied this percentage to its estimated earnings gap of \$2.7 billion per year to obtain an estimate of GDP lost because of the disadvantage. This figure was equal to \$4.4 billion per year ($\$2.7 \text{ billion} \times 1/0.61 = \4.426 billion).

This method is used here to gain an estimate of the increase in output or GDP which would follow an improvement in employment conditions at Thamarrurr. Employment income as a proportion of the Australian GDP is 50 per cent. Using this figure in the calculation, however, suggests that the businesses that could be developed at Thamarrurr would be the same as those for Australia overall. In fact, businesses which could be developed at Thamarrurr would be small businesses and much less capital intensive than for Australian businesses overall. Thus earnings as a proportion of the Thamarrurr GDP would be higher than 50 per cent.

For the purpose of this study, it is assumed that earned income as a proportion of Thamarrurr GDP when there are improved employment conditions is 60 per cent. The justification for this is that while the businesses will pay GST of about 10 per cent, this will be somewhat offset by subsidies; and rents and interest costs will be low, though transport costs will be high.

According to this assumption, improving employment conditions at Thamarrurr to equal the Northern Territory average will increase output at Thamarrurr by \$43.77 million per year ($\$26.26 \text{ million} \times 1/0.6$).

INCOME AND OUTPUT GAPS USING THE NORTHERN TERRITORY INDIGENOUS AVERAGE

Table 7 shows the calculation of the increase in employment incomes at Thamarrurr if conditions there became the same as those for the Northern Territory Indigenous average. The method used to obtain this estimate is the same as that used for the Northern Territory average calculation above. The table shows that Thamarrurr employment income would increase by \$4.44 million if employment conditions there were the same as those of Northern Territory Indigenous people overall. The actual increase in disposable income as mentioned above, however, would be less than this figure due to the reduction in unemployment benefits, family tax benefits, and other benefits.

Table 7. Increase in Thamarrurr region income consequent on achieving parity with Northern Territory Indigenous employment rates

	Thamarrurr	NT Indigenous average
Average employment income per employed person per annum	\$11,550	\$17,731
Employment rate (% of persons 15+ years)	16.1%	33.2%
Thamarrurr population 15+ years	1,104	
Thamarrurr employment number at the Northern Territory Indigenous employment rate	366	
Thamarrurr total employment incomes if paid and employed at the Northern Territory Indigenous rates	\$6,489,546	
Actual Thamarrurr employed incomes	\$2,052,943	
The increase in Thamarrurr employment incomes	\$4,436,603	

Note: The Northern Territory average Indigenous employment income and employment rate were obtained from Taylor (2004).

As for the output gap, the same method as for the Northern Territory average is used to establish the estimated increase in GDP resulting in an estimated increase in output at Thamarrurr of \$7.39 million per year (\$4.44 million x 1/0.6).

INCOME AND OUTPUT GAPS USING THE LONGREACH AVERAGE

Table 8 shows the results of calculating the increase in employment incomes at Thamarrurr if conditions there became the same as those for Longreach, which has an employment rate of 63 per cent and an average annual employment income of \$23,400. By applying these figures to the Thamarrurr population, as indicated, we can derive an estimated increase in employment income for Thamarrurr of \$14.2 million per annum. In this instance the increase in output at Thamarrurr is equal to \$23.70 million per year (\$14.2 million x 1/0.6).

Table 8. Increase in Thamarrurr region income consequent on achieving parity with Longreach employment rates

	Thamarrurr	Longreach average
Average employment income per employed person per annum	\$11,550	\$23,400
Employment rate (% of persons 15+ years)	16.1%	63.0%
Thamarrurr population 15+ years	1,104	
Thamarrurr employment number at the Longreach employment rate	695	
Thamarrurr total employment incomes if paid and employed at the Longreach Indigenous rates	\$16,275,168	
Actual Thamarrurr employment income	\$2,052,943	
The increase in Thamarrurr employment income	\$14,222,225	

Note: Employment income and the employment rate for Longreach were obtained from ABS Catalogue No. 2002.0.

SUMMARY OF INCOME AND OUTPUT GAPS

Table 9 summarises the above results in terms of the increases in employment incomes and output if the employment conditions at Thamarrurr were improved to equal the Northern Territory average, the Northern Territory Indigenous average, or the Longreach average.

Table 9. The increase in employment incomes and output which would follow an improvement in Thamarrurr employment conditions to equal a given target standard

Measure of improvement from achieving a given standard	NT average	NT Indigenous average	Longreach average
Increase in Thamarrurr Indigenous employment income per annum	\$26.26m	\$4.44m	\$14.22m
Increase in Thamarrurr value of output per annum	\$43.77m	\$7.39m	\$23.70m

If the Northern Territory average employment and other socioeconomic conditions could be achieved in Thamarrurr then two things would happen. Firstly, the employment incomes and value of output at Thamarrurr would increase by the amounts shown in Table 9. Secondly, the remedial expenditures, which are defined as the difference between the Northern Territory per capita expenditure on programs and those for Thamarrurr, would decrease to zero. The reduction in remedial expenditures will be discussed later in this report.

The relevance of the Northern Territory average, the Northern Territory Indigenous average, and the Longreach average as targets varies. Firstly, it is very unlikely that employment conditions in Thamarrurr could reach the Northern Territory average in the short or medium term and so it is better seen as a target for the very long term. On the other hand, the Northern Territory Indigenous average may be a realistic target in the short term, and the Longreach average may be a realistic target for the next 20 years.

INCREASING INDIGENOUS EMPLOYMENT AT THAMARRURR

While the goal of increasing output is of importance to the nation and the Northern Territory, the overwhelmingly dominant goal for Thamarrurr and government is one of increasing Indigenous employment and employment incomes. For that reason, the following discussion will concentrate on factors affecting employment and employment incomes. From the perspective of opportunity costs assessment this is relevant since actions which increase Indigenous employment in the Thamarrurr region will also generally result in increased output.

EMPLOYMENT TARGETS

In terms of employment rates, the average rate for the Northern Territory as a whole can be proffered as the most desired. If that could be achieved, incomes and output in the Thamarrurr region would be very much higher than at present and remedial expenditure would, theoretically speaking, be reduced to zero. The Longreach conditions are the next most preferred target, and the Northern Territory Indigenous average last.

However, in terms of achievability, these targets rank in the opposite order. The more desired the target, the greater is the required improvement in conditions and government support for Thamarrurr and so the less achievable is the target in the short term. Current labour-force conditions also have implications for the achievability of these targets. In order that the Northern Territory average be achieved, Indigenous employment at Thamarrurr would need to increase by 565 persons, and the Longreach target would require an additional 517 persons to hold jobs. At present, however, there are 449 Aboriginal people unemployed at Thamarrurr, which means that these targets could not be achieved without a dramatic change in the underlying conditions that result in a given sized labour force. This could not be achieved in the short term. The Northern Territory Indigenous average, however, is achievable in the shorter term since it requires only 188 additional jobs to be filled by local people, with average employment incomes rising to \$17,731 per annum. Thus, in terms of labour-force conditions, the Northern Territory Indigenous average is a more realistic target for the short term.

One of the reasons why employment conditions at Thamarrurr are inferior to the Northern Territory average, the Longreach average, and the Northern Territory Indigenous average is the simple fact of a lack of mainstream economic activity in the region. The factors weighing in favour of higher employment in the Northern Territory as a whole include already high incomes that lead to high local demand, major transport links, commercial mineral deposits, productive agricultural land, an environment of tourism interest, substantial infrastructure facilities, and government employment. At present, Thamarrurr has none of these, though some can be developed. Thus, the development of Thamarrurr cannot be expected to take place if left to market forces alone, and its development will require substantial additional government expenditure and subsidies.

Even if economic development is created at Thamarrurr, Indigenous labour may or may not gain substantial additional employment, depending on whether further development leads to additional demand for Indigenous labour and whether local people can take up new jobs. Thus, in the following discussion, the potential for increased local employment is examined in terms of demand-side conditions and supply-side conditions for Indigenous labour.

As Taylor (2004) points out, the scale of job creation required to make an impact on current labour force status in the Thamarrurr region is very substantial, as the working-age population is set to expand rapidly and the employment base for Indigenous residents is very low. Just to maintain the current employment rate will require a

doubling of those in work over the next 20 years. Even if Aboriginal people were to occupy every job in Thamarrurr, at current levels this would be far too few to make inroads into labour force status. Either way, however, cheap policy options appear unavailable—resources will be needed to help raise productivity via education, training and job creation, or the remedial costs of welfare and management of social pathologies due to 'business as usual' will escalate. Whatever the case, a fiscal response is unavoidable.

Avenues for employment generation are most likely to occur via an import substitution model, embracing activities such as the construction and maintenance of housing and physical infrastructure (including roads), education, health services, retailing, public administration and planning, transport, media, land restoration, land management, and tourism. Some of the diversity in economic activity encompassed here is already in place via CDEP schemes, although it is rarely recognised as such, often being seen amorously as 'just' CDEP work. The degree to which this represents cost-shifting and substitution for proper Commonwealth, Territory and local government funding of employment in the provision of essential services needs to be examined and addressed.

Presently, many regionally-based jobs are occupied by imported non-Aboriginal workers, as they tend to be managerial, professional and trade positions requiring particular skills and job-readiness. While there is unlikely to be rapid 'Aboriginalisation' of such positions, the local system of mentoring Aboriginal middle managers in many occupations is an important first step. Alongside this, there is a parallel need to tackle deeper supply-side structural hurdles if local people are to successfully compete for skilled mainstream jobs with Aboriginal and non-Aboriginal people from outside the Thamarrurr region. These hurdles include the minimal numbers of local people who progress to secondary level education with requisite literacy and numeracy skills. This partly reflects low school participation and attendance levels, as well as relatively low participation in and successful completion of post-school certificate level training courses.

However, even if all such positions were occupied by local people, there would remain a large deficit in numbers employed according to projections of working-age population. Thus, the real planning need is to explore ways of generating labour-intensive economic activity which, in the particular cultural setting of Thamarrurr, places an emphasis on strengthening elements of customary economic activity alongside the development of more mainstream employment opportunities. Elsewhere in the Top End, this has been demonstrated to be an important plank of a hybrid approach to conceptualising remote labour markets (Altman 2001, 2003b, 2004).

DEMAND-SIDE CONDITIONS

A range of opportunities exists within the Thamarrurr region for raising the demand for local Indigenous labour. All of these will either require government expenditures or subsidies, or will be more successful with them. The full range of economic possibilities has been outlined by the Thamarrurr Regional Council in the context of scoping the regional impact of the Blacktip and Trans Territory Pipeline projects (Thamarrurr Regional Council 2005). The following provides a brief outline.

Housing

A key element in the Thamarrurr Regional Council's plans for the development of local employment opportunities is the establishment of a regional construction industry. The basis for this industry planning lies in the substantial existing backlog of regional housing and infrastructure need, as well as the expanding requirements to accommodate population growth and provide maintenance services. Notwithstanding keen interest, one difficulty that communities experience in converting such economic opportunities into local employment is their inevitably higher cost structure in competitive tendering with urban-based contractors. To the extent that this is an issue

at Thamarrurr, the 'whole-of-government' partnership that forms the basis of the COAG ICCP trial provides a potentially unique framework to consider the opportunity costs of such government tendering processes in terms of the social consequences and dollar costs of foregone regional output. In effect, the lowest tender for public works may not necessarily present the cheapest option for government overall.

Clearly, from Taylor (2004), there is an acute shortage of housing in the Thamarrurr region. There are currently 151 houses with an average occupancy of 16.5 persons per house, though some houses have 20 or more occupants. These rates are unacceptable by any standards and well above the Indigenous Housing Authority of the Northern Territory (IHANT) standard of seven persons per house. In order that the IHANT standard be achieved, 206 additional houses are required immediately, and this number will increase rapidly because the Thamarrurr population is growing at around 3 per cent per annum. There is also a shortage of accommodation for visitors so that any large development program at Thamarrurr will require even further accommodation. In addition to the need for new houses, 35 of the existing houses urgently need upgrading or replacement.

These very poor housing conditions, apart from being unacceptable in their own right, contribute to a range of community problems including poor outcomes in terms of health, study conditions for children, work performance, and domestic violence, as mentioned earlier in this report.

Clearly, the Thamarrurr region needs a very large house building program and with it there will be the possibility of many new jobs for Thamarrurr people. The Thamarrurr Council's housing plan estimates that a building program involving the construction of 55 houses per year would provide employment for 35 local people initially. The number who could be employed could increase substantially as the skills-base of Thamarrurr people improves. At present, however, government funds Thamarrurr for the construction of only seven houses per year.

Infrastructure developments

Along with the need for extra housing, there is a considerable need for infrastructure development in Wadeye itself, and at existing and proposed outstations. These include road construction and maintenance, water and power reticulation, and sewer construction. Again, with the appropriate training, a number of local people could gain employment in these activities.

Local quarry

Quarry materials for construction at Thamarrurr are very expensive because of transport costs from Darwin. Current prices for crushed rock from Darwin are \$150 per tonne by barge in the wet season and \$65 per tonne by road in the dry season. Partly as a consequence, Cordell's Building Cost Guide, which establishes Australian relativities for building costs, indicates the cost index against \$100 in Brisbane as 1.8 in Darwin and 2.2 at Wadeye. Clearly, any development that assists in reducing this price differential would be beneficial to regional growth with potential employment spin-offs.

One such opportunity has been identified in the form of sand and rock deposits some 12 kilometres east of Palumpa that are suitable for supplying concrete products for house construction and infrastructure developments. Utilisation of this local resource would help to significantly reduce these costs. These materials could be used to create concrete products for all purposes, including the construction of houses, roads, gravel surfaces, and causeways. While the project is likely to create direct jobs for only two local people on CDEP-type wage levels, there are other potential benefits to Thamarrurr, including lower costs of house and other construction. Synergies are also available here with the Trans Territory pipeline development, since access to the quarry site (50 kilometres from Wadeye along the main road to Peppimenarti) would require upgrading of the main road because of the use of heavy haulage for both the pipeline development and subsequent conveyance of quarry materials to Wadeye.

In terms of the projected cost of upgrading the Thamarrurr region road network, Matchplay Engineering Services Pty Ltd provides two scenarios (Thamarrurr Regional Council 2003a: 4–5). The first involves a blanket upgrade of the entire network of 234 kilometres of road from its present overall poor condition to an acceptable standard of well-drained, formed road with an 8 metre wide running surface. This would cost \$8.5 million. The second looks at upgrading the network over a period of five years to a less than acceptable standard with reduced formation compared to the first scenario, and a narrower running surface. The annual cost here would be \$844,000 per annum with a total cost of \$4.42 million over five years.

Education

The Thamarrurr Regional School Improvement Plan 2002–2007 includes a number of developments that have potential implications for increased staffing. Included in these are an upgrade of the school to senior secondary status, the expansion of homeland education (initially at Kuy and Wudapuli but expanding to meet other demand), efforts to increase school enrolments and attendance rates, and further development of the Kardu Lurruth Ngala Cultural Centre. Overall, if these planned developments were to be undertaken they could create an additional 22 jobs, most of them for local people.

Land management program

Thamarrurr has a 'Caring for Country' land management program organised according to the aims of the Thamarrurr Land and Sea Management Plan. This sets out activities relating to the control of *Mimosa pigra*, exotic disease monitoring on a cost recovery basis for the Australian Quarantine and Inspection Service (AQIS), implementation of revegetation and erosion control measures, protection of marine plant and animal species, and improved fire management using early mosaic burns. The economic benefits from the current Thamarrurr Rangers program include employment opportunities for up to 20 local people with a top-up salary component.

In addition to this there is a management position funded by the Indigenous Land Corporation and managed by the Northern Land Council. Current planning for a formal natural resource management structure within the Thamarrurr Regional Council envisages the need for a further two such positions. In addition, there is potential for fully-funded employment opportunities with support from government agencies such as AQIS and Fisheries, as well as possible enterprise development based on natural resource utilisation such as cattle, aquaculture and tourism.

This program is capable of employing many more people if the funds were available. The current plan to upgrade Thamarrurr Rangers to a Natural Resource Management division within the Thamarrurr Council structure is similar to the make up of the Dhimurru Land Management Corporation at Gove. Currently, Thamarrurr Rangers is underwritten by CDEP but with training via the Structured Training and Employment Projects (STEP) programs administered by the Department of Employment and Workplace Relations' (DEWR), land management employment could be placed on a more sound, mainstream footing. Immediate opportunities for applying such skills exist in joint venture rehabilitation work for the Trans Territory pipeline.

Arts and craft production

Since 1997, as many as 126 locally-based artists have sold works via the Dirrmu Ngakumarl gallery at Wadeye, or via the Wadeye Arts and Crafts store in Darwin. Presently, however, only a few artists remain commercially active, and fewer still have received significant economic return. Compared to many other Indigenous communities (some of which, such as Peppimenarti, Daly River and Warmun, have social links to Thamarrurr) the art and craft industry is now relatively small and financially insecure. The economic case for building on these traditional skills has been

clearly stated (Altman 2003a), and the need now at Thamarrurr is to acquire resources to invest in infrastructure, and to identify and process marketable products. The potential for re-invigorating this labour intensive economic activity is detailed in the *Northern Territory Indigenous Arts Strategy* (Northern Territory Government 2003b).

Expansion of the CDEP scheme

Despite the fact that Wadeye is the Northern Territory's largest Indigenous settlement, it has only a small CDEP scheme when compared to many other communities, and part of the Wadeye scheme workforce is actually deployed at Palumpa. Not only does CDEP provide employment directly, it also subsidises many other areas of mainstream employment activity within the region—most notably in Territory and local government areas of responsibility such as the school, clinic, and council. CDEP activities in 2003 included grading, fencing, road maintenance, plant maintenance and operation, market gardening, media, landscaping, childcare, aged care, environmental health services, sewing, house and other building construction, non-building construction, plumbing and electrical maintenance, pipe laying, painting and decorating, vehicle repair, youth and men's support activities, Centrelink services, clinic assistants, teachers assistants, sport and recreation activities, office assistants, store assistants, and security. CDEP also underwrites the activities of the Thamarrurr Rangers' Caring for Country program. For many of these activities (e.g., the school and clinic), questions arise about cost-shifting from different tiers of government and whether some of these CDEP funds should more properly be directed to supporting 'new' employment generation.

Localisation of workforce

There are approximately 100 non-Thamarrurr employees at Thamarrurr. Some of these employees are very highly skilled and could not, in the near or intermediate future, be replaced by local people. Many of the remainder, however, are administrative staff or trades persons and it is possible that over time many of these could be replaced by local people. A major restriction on this happening at present is the lack of education and skills amongst local people. It will be shown later in this report that per capita spending on education and training at Thamarrurr is well below the Northern Territory average, so there is ample justification for enhanced expenditure in this important area of local capacity building.

Preferential employment and tendering practices

Additional employment could be created by changing some government employment and tendering practices. The government could institute a policy where it employs local Indigenous workers, even though they may be less qualified or efficient than potential non-Indigenous employees. Also, the process of competitive tendering could be replaced by preferential tendering, where preference is given to a Thamarrurr tender in cases where that tender uses local labour. If these practices lead to a reduction in unemployment, the government savings could be substantial. These include a reduction in Centrelink payments of perhaps \$10,000 per person per year for those who gain a job, and an additional reduction in government costs resulting from an improvement in the community's work readiness as a result of the work experience.

Joint ventures

Development projects in Aboriginal communities often suffer from a lack of financial capital, managerial expertise and skills. To overcome these problems, some communities have established joint ventures with organisations that have the required expertise and resources. Joint ventures can be formed with private companies or government organisations and may include organisations that deal regularly with the community. Joint venture agreements may be written to require the outside partner to employ and train a given number of local people. However, there

are down sides to joint ventures for the local community, which may include loss of local control over the project. Nevertheless, this approach may lead to the creation of employment opportunities which would not be otherwise available for Thamarrurr.

Total new jobs

Leaving aside possible expansion of employment via CDEP and if joint venture developments are excluded, the above opportunities could result in up to 140 new jobs (a rough estimate) for local people. All other things being equal, this would raise the employment rate at Thamarrurr to be close to the Northern Territory Indigenous average, while an expansion of CDEP by about 48 places would raise the number of new jobs to about the 188 required for the employment rate at Thamarrurr to equal the Northern Territory Indigenous average. An expansion of employment much beyond this level would require the instigation of major projects in such areas as tourism and grazing. At least in the former case, this would require the injection of substantial outside funds, possibly obtained through joint venture arrangements. However, because of rapid growth in the working-age population at Thamarrurr, all of the opportunities explored below would need to be taken up, and more besides, simply to ensure that employment conditions at Thamarrurr do not decline below what they are at present. In particular, activities that have the potential to engage large numbers of participants, such as those associated with land management and use, should be seen as part of the legitimate mix of employment options and resourced accordingly (MCATSIA 2004).

ESTIMATING FUTURE LABOUR FORCE STATUS

From Table 1, the resident Aboriginal population of working age in Thamarrurr is projected to almost double in size from 1,104 in 2003 to 2,133 by 2023—an increase of 1,029 or 93 per cent. Clearly, the poor economic status of Aboriginal people in the region is largely a function of their continued failure to adequately participate in paid economic activity. What then is the scale of the task ahead if a key aim of the ICCP process is to enhance such participation?

Table 10. Extra Aboriginal jobs required in the Thamarrurr region by 2023 against selected target employment rates

Employment/population ratio in 2003	Base employment 2003	Total jobs required by 2023	Extra jobs required by 2023
16.1 ^a	178	343	165
32.2 ^b	178	687	509
33.2 ^c	178	708	530

a. The 2003 Aboriginal employment/population ratio inclusive of CDEP.

b. A doubling of the Aboriginal employment/population ratio in 2001.

c. The Northern Territory Aboriginal census-derived employment/population ratio in 2001.

Source: Taylor 2004.

Three future employment scenarios are explored in Table 10. The first considers the number of jobs that would be required by 2023 if the 2003 Aboriginal employment/population ratio were to remain unchanged at the current very low rate of 16.1 per cent (inclusive of CDEP): the answer is 343. Thus, the current workforce would need to double in size over the next 20 years simply to avoid any further deterioration in the low employment rate. On present indications with only 140 extra jobs identified as potentially available, this points to a shortfall of 165 jobs required just to keep employment at its current low level. However, what if the Thamarrurr partnership established a target of double the employment rate, which would bring it in line approximately with the rate recorded for all Aboriginal people in the Northern Territory in 2001? This might be seen as moving to 'normalise' the situation at Wadeye—a term that is now part of the lexicon of planning within the Thamarrurr region, and signals the pursuit of equity in social and economic conditions. Against this scenario, this requires more than 500 additional jobs—a task of such magnitude that it seems way beyond the capacity of current policy settings.

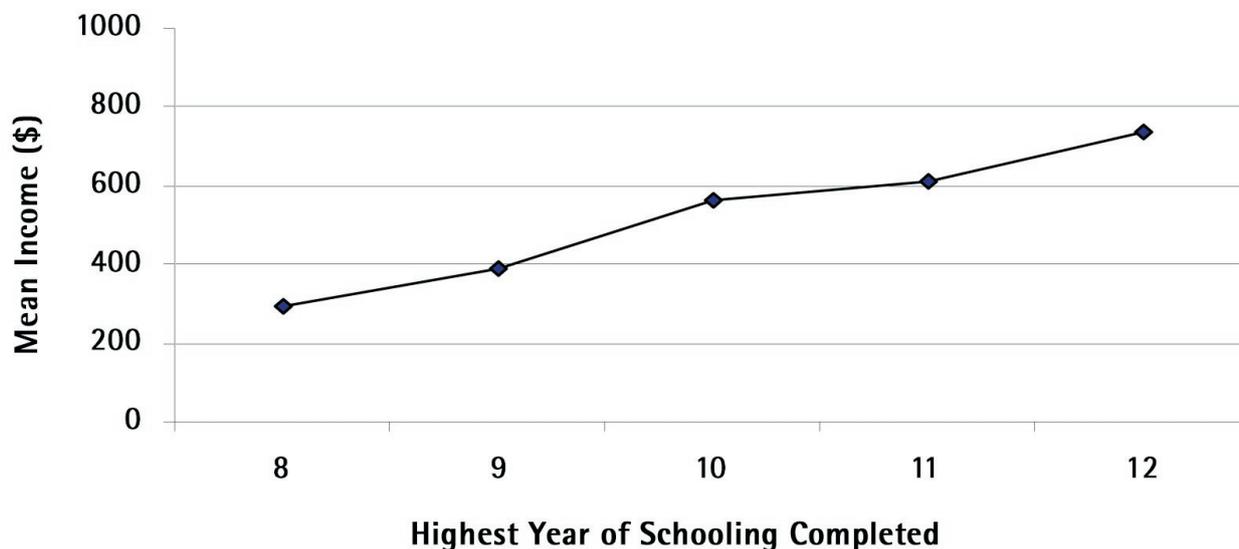
Cost of sustaining status quo in labour force status

In 2003, Centrelink distributed payments worth \$8.6 million to Thamarrurr residents in the form of pensions, Newstart Allowance, family payments, and parenting and carers' payments. In line with the formulae for citizen entitlements, it can be said that the pattern and amount of these payments reflected the existing labour force status of the population combined with age and family composition. If these population characteristics were to persist over the next 20 years (an outcome which is not inconceivable given the size of jobs growth necessary to improve labour force status), then the income support expenditure by Centrelink can be assumed to simply rise in line with population growth at around 3 per cent per annum. At current levels of support, this would result in a total expenditure by 2023 of \$16.6 million, all other things being equal. On top of this, if the current costs of running the CDEP scheme (\$2.33 million) were to expand in the same way with the numbers employed by the scheme in proportion to the 2003 level, then the cost of CDEP by 2023 in current prices would amount to \$4.5 million. Overall then, the extra cost to government by 2023 of simply sustaining the status quo in labour force status amounts to \$10.2 million.

SUPPLY-SIDE CONDITIONS

The unemployment rate in the Thamarrurr region is very high if the number of Newstart Allowance customers (449) is used as the measure. While the activity test is waived in the region, it is likely that many of the jobs which could be generated by the developments outlined above could be taken up either by people who are currently engaged in CDEP, or by at least some of those in receipt of Newstart Allowance. However, in order that Thamarrurr people more effectively participate in the regular mainstream labour market, measures will need to be taken to improve the work readiness of the labour force. This will need across-the-board improvement in education and training, health and nutrition, housing, and personal and property security, all of which will require considerable additional government investment in the community. For enhanced participation in more customary activities on country, investment is also needed to ensure access, availability of equipment, and opportunities for marketing and training (Altman 2003b).

Fig. 2. The relationship between individual weekly income per year and highest year of schooling completed: Northern Territory, 2001



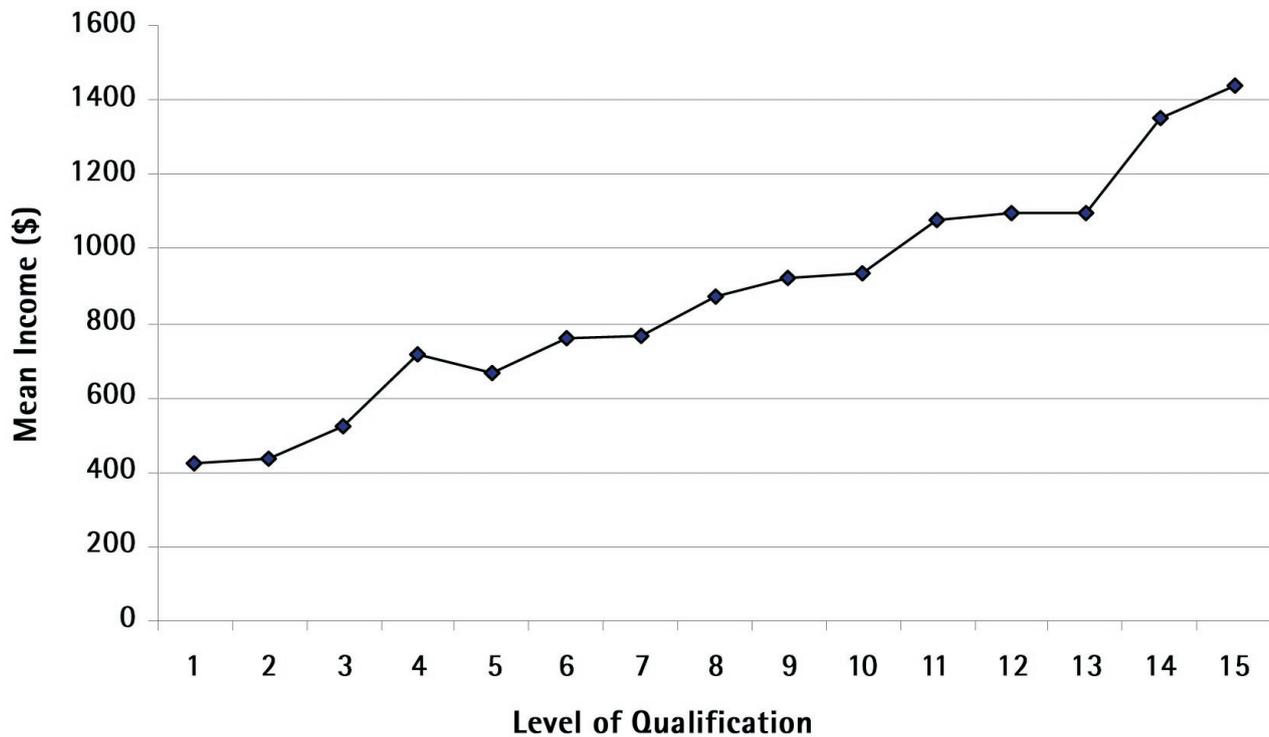
Source: ABS 2001 Census customised tables.

As far as raising incomes is concerned, the most readily available empirical relationship is that between education and training on the one hand, and earned income, on the other. Figs. 2 and 3 show these relationships for the Northern Territory overall. It can be seen that increases in the highest year of schooling completed results in substantial increases in income, as do increases in the highest level of training and tertiary education achieved. This type of relationship can be shown to hold at the national level as well, and countries wishing to increase their standards of living typically invest heavily in education and training.

These figures have some significance for conditions at Thamarrurr. At present the average Thamarrurr resident lies at the extreme left of the curves shown in Figs 2 and 3. That is, the average person has schooling to Year 7 or less and has no qualification. Using the trend lines, both figures predict that earned income for such a person would be reasonably close to the Thamarrurr average of \$11,550 per annum. In the meantime, according to the Employment and Training Strategy prepared for the Thamarrurr Regional Council (Thamarrurr Regional Council 2003b), all support staff employed by the Council and by other organisations operating at Wadeye should have a minimum Certificate IV in Workplace Training and Assessment (category 5 in Fig. 3).

It cannot be inferred, however, that increases in the level of education and training achieved will automatically increase average income at Thamarrurr. It is clear that training, in particular, must be matched to the jobs available as even qualified local people are underemployed with many holding Certificate level qualifications that have never been practically applied. One glaring example concerns the 27 Wadeye residents who achieved Certificate II qualifications in tourism from the Northern Territory University in 1999. The aim was to prepare a workforce for a tourism venture that never materialised. This underlines the case that skills development needs to be closely tied to the creation of employment opportunities. Subject to this proviso, there is a very strong case for increased investment in education and training at Thamarrurr.

**Fig. 3. The relationship between individual weekly income and qualification level:
Northern Territory, 2001**



Key: 1. No qualification, 2. Certificate I, 3. Certificate II, 4. Certificate III, 5. Certificate IV, 6. Advanced diploma, 7. Diploma, 8. Bachelor degree, 9. Graduate diploma, 10. Associate degree, 11. Masters degree, 12. Doctoral degree, 13. Graduate certificate, 14. Professional qualification, 15. Higher doctorate.

Source: ABS 2001 Census customised tables.

REMEDIAL COSTS

Within the opportunity cost framework as specified, remedial costs are estimated as the difference in per capita expenditures in each functional area of government between those made for the Northern Territory population as a whole, and those directed to the Thamarrurr population. These per capita differentials are then weighted by relevant cohorts of the Thamarrurr resident population and summed to produce an overall remedial cost. It is important to note that not all expenditures by government are deemed to be necessary or relevant to this calculation. Thus, we include marginal, or variable, expenditures based on discretionary amounts for program delivery, but exclude system-wide fixed expenditures for items such as administration and corporate services. Also, the focus is on those areas of government that are primarily concerned with social and economic policy and that spend program dollars in the Thamarrurr region, or on the Thamarrurr population, in a manner that can be identified in public accounts. This therefore restricts the analysis to expenditure data provided by the following: the Northern Territory departments of Employment Education and Training, Health and Community Services, Community Development, Sport and Cultural Affairs, Justice, and Police; and the Commonwealth departments of Education Science and Training, Employment and Workplace Relations, Health and Ageing, Aboriginal and Torres Strait Islander Services, Family and Community Services, Transport and Regional Services, and Centrelink.

This approach to establishing relative per capita expenditures is consistent with standard practice in analysing the microeconomics of multi-product firms (governments in this case). When calculating the cost of producing one 'commodity' among many—in this case supporting the Thamarrurr region and its population versus supporting the Northern Territory average—only those costs that are directly caused by the production of that commodity (supporting Thamarrurr) are properly included. Fixed costs, such as head office expenses, which do not vary directly with the production of either commodity, cannot logically be allocated to either commodity, and so are excluded. Another generic point to note is that the data as presented here are reported according to the agencies that spend the dollars and this may not necessarily reflect the source of the dollars, which for the most part are the various relevant departments of the Australian government. However, this is not seen as an issue for the present analysis, since the ultimate aim is to bring all Northern Territory and Thamarrurr expenditures together as a consolidated per capita ratio—in effect, a 'whole-of-government' approach.

GOVERNMENT EXPENDITURES BY FUNCTIONAL AREA

Because government expenditures inevitably vary between financial years (FYs), data for the last three FYs 2001–02 to 2003–04 (or equivalent calendar years) was requested from individual Northern Territory and Commonwealth departments and agencies, and an average expenditure figure was constructed. A further reason for this approach was the establishment of the ICCP trial at Thamarrurr in FY 2003–04. This inevitably directed new monies towards Thamarrurr with the effect of distorting historic patterns and levels of expenditure in the region. One indication of this effect is shown in Table 11, which reveals the proportion of total grants to Kardu Numida/Thamarrurr Regional Council from ICCP/COAG-related sources as opposed to from all other sources between 2001 and 2004.

As shown, the effect of ICCP/COAG-related spending via the Thamarrurr Regional Council has been to lift the level of expenditure in the Thamarrurr region above the historic underlying base of around \$6 million (the relatively high figure of \$8.3 million in 2001–02 reflects a one-off allocation via National Aboriginal Health Strategy). Most of these additional ICCP/COAG-related monies arose due to the re-prioritisation of housing expenditure, especially under the Fixing Houses for Better Health program which is funded by DFACS, and IHANT capital and special

Table 11. Distribution and amounts of ICCP/COAG-related and other expenditures via the Kardu Numida/Thamarrurr Regional Council, 2001–02 to 2003–04

	2001–02		2002–03		2003–04	
	\$ million	%	\$ million	%	\$ million	%
ICCP/COAG	0.0	0.0	0.024	0.4	2.32	25.4
Other	8.34	100.0	5.94	99.6	6.83	74.6
Total	8.34	100.0	5.96	100.0	9.16	100.0

Source: Thamarrurr Regional Council.

grants provided by the Northern Territory Department of Community Development, Sport and Cultural Affairs (DCDSCA). Alongside these major allocations, the Australian government's DFACS supported the development of a housing construction industry.

COAG trial initiatives aside, the purpose of this section is to detail cohort-specific per capita spending at Thamarrurr compared to equivalent cohort spending in the Northern Territory as a whole. Expenditure data provided by individual departments and agencies are presented separately by Northern Territory and Australian government category. We begin with an examination of health expenditure.

NORTHERN TERRITORY DEPARTMENT OF HEALTH AND COMMUNITY SERVICES (DHCS)

Expenditures by the DHCS on the population of the Thamarrurr region are a complex mix of grants to Thamarrurr Regional Council for various health-related projects, plus the costs of running primary health care services through the Thamarrurr clinic, and the costs of providing Darwin-based hospital services to Thamarrurr residents (including medical evacuations and patient travel). The Health and Community Services funds include only those funds that are directly provided for services to Thamarrurr residents. According to DHCS, there are many other programs in the Northern Territory which provide services to all Northern Territory residents, including Thamarrurr, but which are not directly attributable to any single population. The DHCS Annual Report for 2001–2002, for example, indicates that for that year there was a per capita DHCS expenditure of \$4,936 on the Northern Territory Aboriginal and Torres Strait Islander population, compared with a per capita expenditure of \$1,433 on the non-Indigenous population.

As far as grants to Thamarrurr Council are concerned, these have been fairly stable over the past three financial years at around \$95,000 per annum, mostly for Environmental Health projects and Home and Community Care services. By far the greater expenditures are the direct costs of delivering primary health care and hospital services to residents of the Thamarrurr region. These are shown in Table 12, and reveal a fairly stable overall average expenditure of \$4.97 million per annum between 2000 and 2003. The percentage distribution of this spending by program area is indicated in Table 13. As for the pattern of expenditure by cost areas, there appears to have been some shift away from direct hospital costs (which fell by 16% between 2001–02 and 2002–03) towards increased primary health care costs (which rose by 14% over the same period), although expenditure on medical evacuations and patient travel also rose. It is important to note the caveat that the costs shown here are minimal,

Table 12. Breakdown of direct costs of health care delivery to residents of the Thamarrurr region: 2000–01 to 2002–03^a

	2000–01 (\$,000)	2001–02 (\$,000)	2002–03 (\$,000)
Hospital Cost (excluding interstate transfers)	3,214	3,443	2,884
Primary Care–Nursing	1,038	1,004	1,215
Primary Care–AHW	165	189	134
Primary Care–Medical	101	93	124
Medical Evacuation	87	76	96
Patient Travel	110	165	199
Community Services–Family & Children	25	50	37
Community Services–Aged Care & Disability	47	48	48
NGO–Wadeye Palngun Wurnangat Inc.	–	–	20
NGO–HACC Home Care	29	29	59
NGO–Men’s Health Pilot Program	–	15	–
NGO–Environmental Health Project	42	43	53
NGO–Women’s Health Day	5	–	3
Total	4,863	5,155	4,872

Notes: Hospital costs were derived from DRG weighted separations and average total cost (including outpatient and Emergency Departments); Primary Health Care–Nursing and Primary Health Care–AHW costs were recorded in general ledger; Primary Health Care–Medical cost was based on general ledger and population proportions referenced by the average roster of DMO visits; Medical Evacuation and Patient Travel was based on PATS system activity reports and general ledger; Community services estimates are based on activity data, general ledger & population data; NGO services covered a larger area than Wadeye and are therefore overestimates; and NGO–HACC Home Care: 70% from Commonwealth, 30% from DHCS.

General Notes and Limitations: This costing involves only ‘Direct Cost’ as specified in the request. The total is therefore an underestimate, because some services to the community were not recorded by a separate cost centre code. Programs such as public health, dental health, mental health, alcohol and drugs, corporate services, cross-border interstate hospital transfers are therefore not included.

Other limitations of the data include lack of definitions, mixed expenditure recording, and changes in the DHCS accounting system (mainly between 2001–02 and 2002–03).

Cost items for general public health, patient accommodation, training, administration, health promotion activity and corporate services are excluded. Some Thamarrurr clients with severe disabilities such end-stage renal disease reside in Darwin for treatment.

Source: DHCS, Darwin.

Table 13. Percentage distribution of direct costs of health care delivery to residents of the Thamarrurr region: 2000–01 to 2002–03^a

	2000–01 (%)	2001–02 (%)	2002–03 (%)
Hospital Cost (excluding interstate transfers)	66.0	66.7	59.2
Primary Care–Nursing	21.3	19.5	24.9
Primary Care–AHW	3.4	3.7	2.8
Primary Care–Medical	2.1	1.8	2.5
Medical Evacuation	1.8	1.5	2.0
Patient Travel	2.3	3.2	4.1
Community Services–Family & Children	0.5	1.0	0.8
Community Services–Aged Care and Disability	1.0	0.9	1.0
NGO–Wadeye Palngun Wurnangat Inc	0.0	0.0	0.4
NGO–HACC Home Care	0.6	0.6	1.2
NGO–Men’s Health Pilot Program	0.0	0.3	0.0
NGO–Environmental Health Project	0.9	0.8	1.1
NGO–Women’s Health Day	0.1	0.0	0.1
Total	100.0	100.0	100.0

Notes and Source: See Table 12.

Table 14. Breakdown of direct costs of health care delivery in the Northern Territory: 2000–01 to 2002–03

	2000–01 (\$,000)	2001–02 (\$,000)	2002–03 (\$,000)
Hospital Cost (excluding interstate transfers)	212,893	247,882	241,800
Primary Care–Nursing	26,783	27,818	21,014
Primary Care–AHW	4,078	3,767	3,899
Primary Care–Medical	2,882	2,578	3,216
Medical Evacuation	3,957	4,497	4,980
Patient Travel	8,795	10,950	12,349
Community Services–Family & Children	22,767	22,022	26,617
Community Services–Aged Care & Disability	38,283	37,030	44,756
Community Services–Alcohol & Drugs	10,341	11,378	12,354
Total	330,779	367,922	370,985

Notes:

Hospital costs were derived from DRG weighted separations and average total cost (including outpatient and Emergency Departments).

Primary Health Care–Nursing and Primary Health Care–AHW costs were recorded in general ledger.

Primary Health Care–Medical cost was based on general ledger and population proportions referenced by the average roster of DMO visits.

Medical Evacuation and Patient Travel was based on PATS system activity reports and general ledger.

Community services estimates are based on activity data, general ledger & population data.

General Notes and Limitations:

This costing involves only 'Direct Cost' as specified in the request. Corporate services, cross-border interstate hospital transfers are therefore not included.

Other limitations of data include: lack of definitions, mixed expenditure recording, changes in DHCS accounting system (mainly between 2001–02 and 2002–03).

Cost items for general public health, patient accommodation, training, administration, health promotion activity and corporate services are excluded.

Source: DHCS, Darwin.

since some public health programs, along with dental health, mental health, alcohol and drugs, corporate services, and cross-border interstate hospital transfers are not included, nor are cost items for general public health, patient accommodation, training, and health promotion activity.

Total health expenditures by DHCS (except for NGOs) for the whole of the Northern Territory population are shown in Table 14, with percentage distribution shown in Table 15. While direct comparison of the overall costs of health service delivery at Thamarrurr and the Northern Territory are considered later, there are interesting

Table 15. Percentage distribution of direct costs of health care delivery in the Northern Territory: 2000-01 to 2002-03

	2000-01 (%)	2001-02 (%)	2002-03 (%)
Hospital Cost (excluding interstate transfers)	64.4	67.4	65.2
Primary Care-Nursing	8.1	7.6	5.7
Primary Care-AHW	1.2	1.0	1.1
Primary Care-Medical	0.8	0.6	0.8
Medical Evacuation	1.2	1.2	1.3
Patient Travel	2.7	3.0	3.3
Community Services-Family & Children	6.9	6.0	7.2
Community Services-Aged Care & Disability	11.6	10.1	12.1
Community Services-Alcohol & Drugs	3.1	3.1	3.3
Total	100.0	100.0	100.0

Notes: See Table 14.

Table 16. Direct total costs of health care delivery in the Thamarrurr region and the Northern Territory: 2000-01 to 2002-03

	Northern Territory (1)			Thamarrurr (2)		
	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
Total (\$,000)	\$330,780	\$367,922	\$370,985	\$4,863	\$5,156	\$4,871
Per capita	\$1,674	\$1,852	\$1,870	\$2,929	\$3,105	\$2,935
Ratio (2/1)	1.75	1.67	1.57			

Source: DHCS, Darwin.

features of the relative pattern of expenditure that are worth pointing out here. First, despite its remote location and lack of a hospital, 2002-03 expenditure on medical evacuations and patient travel for Thamarrurr comprises only 6.1 per cent of total costs, which is not much higher than the 4.6 per cent of total costs expended in the Territory as a whole. Second, while total expenditure consumed by hospital costs is higher in the Territory as a whole compared to Thamarrurr (65.2% compared to 59.2%), the costs of primary care at Thamarrurr constitute a far higher proportion of overall expenditure in 2002-03 (30.2% compared to 7.6%). Thus, the costs of hospital and primary care combined for the population of Thamarrurr account for as much as 90 per cent of all health spending by DHCS, compared to the Territory average figure of 73 per cent.

The direct per capita costs of Northern Territory government spending on health care delivery for Thamarrurr and the Northern Territory are shown in Table 16. As provided by DHCS, these are based on the 2001 ABS estimated resident population (ERP) (1,660) for Thamarrurr, including non-Indigenous residents. This produces an average per capita expenditure for Thamarrurr over the three financial years of \$2,986. If, however, the estimate of the Thamarrurr regional population established by the 2003 community census is applied, then the denominator should have been 2,147 (Taylor 2004: 25). In this event, the annual average per capita expenditure at Thamarrurr would be more like \$2,314, or 1.3 times the per capita level observed for the Territory as a whole. This is the population level adopted for use in Table 17.

Table 17. Annual average DHCS per capita expenditure on health care delivery in the Thamarrurr region and the Northern Territory: 2000–01 to 2002–03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	356,562,333	4,967,333
Total resident population	198,665	2,147
Per capita \$	1,796	2,314
Ratio (2/1)	1.3	

Source: DHCS, Darwin; ABS 2003; Taylor 2004.

As far as all expenditures on health care delivery in the Northern Territory are concerned, including those made by the Commonwealth government (such as the Medicare Benefits Schedule (MBS) and the Pharmaceutical Benefits Scheme (PBS)), and non-government sources (such as by health insurance funds and individuals), these are available in the Annual Health Expenditure Reports of the Australian Institute of Health and Welfare (AIHW). The most recent of these reports is for FY 2002–03 (AIHW 2004), although this only provides a breakdown of expenditure type for the Northern Territory for FY 2001–02. However, total Northern Territory health expenditure and per capita expenditure for FYs 2001–02 and 2002–03 are available. Thus, total direct health expenditure from all sources in the Northern Territory amounted to \$727 million in 2001–02, and \$817 million in 2002–03 (AIHW 2004: 13). On this basis, per capita health spending for the Territory as a whole was \$3,680 in 2001–02 and \$4,126 in 2002–03 (AIHW 2004: 13).

Apart from specific monies from the Commonwealth Department of Health and Ageing (DoHA) for Aged Care services at Wadeye, Commonwealth expenditures on MBS/PBS in respect of the Thamarrurr population are assumed to be included in the DHCS figures in Table 16 (in any event these payments are likely to be relatively minor—especially MBS payments—given the lack of a resident General Practitioner at Wadeye and the limited visits by DMOs).

In order to compare these global Northern Territory estimates on an even basis with those provided by DHCS for the Thamarrurr population, it is necessary to remove from the AIHW global figures those areas of expenditure that are not included in the Thamarrurr calculation (viz. capital costs, public health, dental health and administration). If we take FY 2001–02 as an example (as this is the year for which published detailed area of expenditure data are available from AIHW for the Northern Territory), and remove these costs, this reduces overall government spending in the Northern Territory in that year to \$469 million (AIHW 2004: 113), producing a per capita figure for the Northern Territory of \$2,488 (Table 18). This can now be compared to the figure of \$2,687 estimated for the Thamarrurr population in that same FY using the expenditure for 2001–02 from Table 16 combined with

an estimate of 2,000 for the base population in 2001 following Taylor (2004). Thus, health expenditure from all government sources is slightly higher for the Thamarrurr population as indicated by the ratio of 1.13. However, if total health expenditure reported by AIHW is taken into account, including that from non-government sources, then the per capita amount in the Territory rises to \$2,909 and the ratio dips to 0.92.

Table 18. Total and per capita government^a expenditure on health care delivery in the Thamarrurr region and the Northern Territory: 2001–02

	Northern Territory (1)	Thamarrurr (2)
\$ Expenditure in 2001–02	469,000,000	5,333,733 ^b
Total resident population	198,358	2,000
Per capita \$	2,364	2,667
Ratio (1/2)	1.13	

Notes: a. Includes Commonwealth and Northern Territory government expenditure.
b. Includes DoHA spending of \$178,733 on Aged Care at Thamarrurr in 2001–02.

Sources: DHCS, Darwin; AIHW 2004: 113; DoHA.

The reason for simply combining Northern Territory and Commonwealth spending in this calculation is the difficulty encountered in clearly establishing the actual separate amounts of each. In Table 19, the relative distribution of health expenditure in the Northern Territory in 2001–02 is presented according to the primary source of funds as recorded by the AIHW. As indicated, the largest source of expenditure (43%) was the Northern Territory government with a total of \$313 million. However, according to DHCS data in Table 16, direct costs of health spending by the Northern Territory government in this FY was \$368 million, while the DHCS Annual Report for that FY indicates total expenditure at \$494 million (DHCS 2002: 180). Clearly, when compared with the distribution in Table 19, it appears that variable amounts of Commonwealth monies may be accounted for as Northern Territory monies depending on the methodology applied. In the absence of any information to explain these variable figures, the method used here to compare per capita expenditures for Thamarrurr with those for the Northern Territory as a whole is to apply the 2001–02 global government expenditure in the Northern Territory (less capital costs, public health, dental health and administration costs) as per Table 18 with no reference to funding source.

Table 19. Total and percentage distribution of health expenditure in the Northern Territory by source of funds, 2001–02

Commonwealth	Territory and local	Non-government	Total
\$255m (35.0)	\$313m (43.1)	\$159m (21.9)	\$727m (100.0)

Note: Percentages in parentheses.
Source: AIHW 2004: 113.

NORTHERN TERRITORY POLICE

Establishing a meaningful relative cost of policing in respect of the Thamarrurr regional population is problematic. For one thing, the Wadeye police station services an area and population that is wider than just the Thamarrurr region. For another, residents of the Thamarrurr region impact on the costs of policing in other parts of the Territory—not least in Darwin, though to a degree that is difficult to isolate and quantify. Finally, in recent years additional policing costs have been incurred due to public disorder in the Thamarrurr region yet the associated costs of deploying additional resources and personnel from the Territory Police Support Division are difficult to quantify.

For what it is worth given these caveats, the police station at Wadeye costs a total of \$661,400 per annum to run, involving personnel costs of \$390,500 and operational costs of \$270,900. That said, one criteria applied by the Northern Territory Police to establish cost relativities between police stations in terms of the impact of crime levels on the costs of policing is the amount of personnel overtime incurred. Following this lead, data for Wadeye and all other police stations in the Territory were provided by the Northern Territory Police indicating the amount of overtime dollars claimed for July to November in FY 2004–05, together with the number of personnel deployed. These data reveal an average per capita (police personnel) overtime claimed of \$2,118 for the Northern Territory Police service as a whole, compared to \$4,710 for Wadeye. On this basis, the costs of policing at Wadeye may be said to be 2.2 times greater than the Northern Territory average. Converting this to an actual dollar value is fraught with difficulty, but an annual gross estimate of \$30,879 can be derived as the excess cost of policing at Wadeye compared to the average situation in the Northern Territory as a whole.

NORTHERN TERRITORY DEPARTMENT OF JUSTICE

Expenditures on correctional services by the Northern Territory Department of Justice fall into three broad categories focused on different age groups within the population. Juvenile detention services provide for the safe detention, rehabilitation and reintegration of juvenile offenders aged 10–17 years; custodial services provide for the incarceration of adult offenders as well as their rehabilitation and reintegration into the community; while community corrections services provide for the assessment, monitoring and supervision of community-based adult and juvenile offenders in line with orders as directed by the courts and Parole Board.

Table 20. Per capita costs of custodial services for the Thamarrurr region and the Northern Territory: 2000–01 to 2002–03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	38,149,333	804,857
Pop 18+	139,006	998
Per capita \$	274	806
Ratio (2/1)	2.9	

Source: Northern Territory Department of Justice; population figures from ABS 2003 cat no. 3201.0 and Taylor 2004.

Custodial costs (Table 20) are calculated for the population aged 18 years and over and show that per capita costs at Thamarrurr are almost three times higher than those for the Northern Territory as a whole. As for juvenile detention, this refers to the population aged 10–17 years, and per capita costs for Thamarrurr juveniles are more than five times the Northern Territory average (Table 21).

Table 21. Per capita costs of juvenile detention for the Thamarrurr region and the Northern Territory: 2000–01 to 2002–03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	3,417,667	325,121
Pop 10–17 years	25,050	456
Per capita \$	136	713
Ratio (2/1)	5.2	

Source: Northern Territory Department of Justice; population figures from ABS 2003 cat no. 3201.0 and Taylor 2004.

Finally, community corrections are directed at all those aged 10 years and over, and per capita costs at Thamarrurr are 2.5 times the Northern Territory average (Table 22).

Table 22. Per capita costs of community corrections for the Thamarrurr region and the Northern Territory: 2000–01 to 2002–03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	5,848,667	133,000
Pop >10 years	164,056	1,454
Per capita	36	91
Ratio (2/1)	2.5	

Source: Northern Territory Department of Justice; population figures from ABS 2003 cat no. 3201.0 and Taylor 2004.

Of course, the sentencing of offenders requires processing by the Northern Territory Magistrate's court system. The regional courthouse at Wadeye forms part of the Darwin court circuit, requiring frequent air travel between the two. In addition to this, cases involving Thamarrurr residents may also be heard in Darwin, although the tendency is for the majority of cases to be dealt with at Wadeye. The vast majority of these hearings involve the criminal (as opposed to the civil) justice system. Overall, according to the Northern Territory Department of Justice, the cost of operating the courts in the Northern Territory amounted to \$18.1 million in FY 2003–04. Working out the cost of operating the Wadeye court relative to this is not straightforward, so an indirect method is used. The actual cost of servicing the Wadeye court arises primarily from air travel and this amounted to \$63,000 in FY 2003–04. However, on top of that, there are salary costs for magistrates and support staff. For Wadeye, these costs are estimated to be \$120,000 in FY 2003–04 based on a calculation using the Wadeye share of total Northern Territory court lodgements (2.1%) to pro rata total salary costs. The total operational cost for Wadeye is thus \$183,492. Converted to a per capita figure (using the 10+ population as the base), this amounts to \$126 per capita, which is 12 per cent higher than the average figure of \$112 for the Northern Territory as a whole.

Adding all of these expenditures together produces an overall cost of administering criminal justice on behalf of eligible Thamarrurr residents of \$1.44 million. However, this figure is a minimum estimate as it does not account for Thamarrurr residents processed by courts outside of Wadeye. More importantly, it fails to capture many other important costs of crime.

According to Mayhew (2003), no study in Australia has ever fully assessed the myriad hidden costs of crime. For reasons of expediency, the tendency has been to simply establish the amounts spent on policing and administering the criminal justice system, as above. However, other direct and intangible costs of crime also exist, including lost productivity due to incarceration. Among the direct costs are those associated with repairing criminal damage, loss of property due to theft, provision of security, and costs to the health system due to assault and drug offences. Intangible costs set a monetary value on pain, suffering and lost quality of life (Mayhew 2003). Overall in Australia, these direct and intangible costs have been estimated at \$19 billion, placing them way above the more visible cost of administering criminal justice (\$13 billion).

None of these direct and intangible costs have been established for Thamarrurr, nor for that matter for the Northern Territory. To that extent, the costs of administering criminal justice as presented here represent the minimum costs of crime. Having said that, some anecdotal evidence does exist to indicate the existence of additional costs at Thamarrurr, as well as an indication of their possible scale. For example, according to Thamarrurr Council, around \$0.5 million (10%) of council monies are expended on providing security. Likewise, the repair bill for property damage at Thamarrurr Regional School exceeds the school maintenance budget. Furthermore, unlike Darwin City Council, for example, Thamarrurr Council has no crime recovery unit and receives no recompense from the court system for property and other damages. Other opportunity costs of crime also exist, for example in the choice between negative spending on the constant processing of repeat offenders as opposed to more positive spending on crime prevention.

In the absence of any direct overall measure of these additional costs for Thamarrurr, it is worth speculating that if their share of total crime costs as calculated at the national level (59%) were to apply, then these hidden costs of crime at Thamarrurr would amount to \$1.89 million, bringing the overall cost (including the \$1.44 million spent on criminal justice) to \$3.33 million. Ultimately, this calculation is highly speculative—on the one hand, given the general lack of work opportunities in the Thamarrurr region, the loss of productivity due to incarceration may be less than in the national estimation, on the other hand costs due to criminal damage together with extra burden on the health system and reduction in quality of life are likely to be higher. The assumption here is that these probably balance out. Whatever the case, the simple point remains that the total costs of crime in respect of the Thamarrurr population are substantially greater than just the costs of administering criminal justice, possibly by a factor of at least two.

NORTHERN TERRITORY DEPARTMENT OF EMPLOYMENT, EDUCATION AND TRAINING (DEET)

The Thamarrurr Regional School (formerly Our Lady of the Sacred Heart) at Wadeye provides for children from preschool age up to secondary years, and is funded for pre-school, primary and secondary cohorts with equivalent ratios to other government schools. In 2003, there were just 10 girls completing year 11 via correspondence, and two of these were enrolled in Northern Territory Open Education Centre courses. Of particular note are enrolments in Foundation Studies (Years 7–8) as this is a bridging course for children who have finished primary but are not ready for high school. Also available is Kardu Kigay, a special school to work program designed to retain senior boys (Kigay) at school. This program commenced in 1999 with funding from the Commonwealth Department of

Table 23. Northern Territory and Australian government spending on education in the Thamarrurr Region: 2000-01 to 2002-03

	2000-01	2001-02	2002-03	Average
Northern Territory payments				
Recurrent Grants	1,556,982	1,789,793	1,793,302	1,713,359
Central Payments - Super/Admin	141,292	152,635	169,450	154,459
R & M Costs	184,389	184,401	185,512	184,767
Operational Costs	221,267	221,282	222,615	221,721
Merrepen & Namarluk	80,697	98,714	100,613	93,341
Sub Total	2,184,627	2,446,825	2,471,492	2,367,648
Commonwealth Programs				
ESL - IILS	52,381	55,581	70,032	59,331
Accelerated Learning in Literacy	9,000	6,464	0	5,155
SAISO	0	29,750	35,074	21,608
CAP	0	23,999	25,734	16,578
IESIP Grants	0	0	46,189	15,396
Principle Directed Pilots Program	10,000	0	0	3,333
Disabled Child Program	13,281	9,710	12,494	11,828
\$ for \$ Grants	6,000	0	0	2,000
Sub Total	90,662	125,504	189,523	135,230
Grand Total	2,275,289	2,572,329	2,661,015	2,502,878

Source: Northern Territory Government.

Education, Science and Training (DEST) as well as CDEP, and it aims to strengthen literacy and numeracy skills and self-esteem among young men with a history of poor school attendance. By road, the nearest secondary school is a newly established independent school at Woolaning near Batchelor, although historically links for secondary education have long been established with St John's College in Darwin.

Most outstations in the Thamarrurr region have no direct access to a school, although there is a small school at Kuy with 20 students and one teacher, while some outstations are trialing an initiative of having a local person teaching children, enhanced by irregular visits from Wadeye-based teaching staff. DEET provides educational services within Thamarrurr through two Homeland Learning Centres (HLCs) in the Merrepen and Namarluk communities. These HLCs are resourced and supported through the Nganmariyanga School (part of the Top End Group School) while some children from these outstations in the east of the region also attend the school at Daly River. Thus, part of the issue in terms of enrolment and attendance at TRS relates to accessibility for some outstations which are more than two hours travel time from Wadeye during the dry season and isolated during the wet.

The details of Northern Territory government spending on education in the Thamarrurr Region are outlined in Table 23 for the three year period 2000-01 to 2002-03. The amounts shown include those elements of Commonwealth spending on Northern Territory schools that are administered by the Northern Territory government. Given that the funding formula for schools is based on a mix of enrolment and attendance levels, the amounts shown reflect

Table 24. Per capita costs of schooling for the enrolled populations of Thamarrurr Region and the Northern Territory: 2000–01 to 2002–03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	349,299,955	2,502,878
Population enrolled	41,585	338
Per capita \$	8,400	7,405
Ratio (2/1)	0.88	

Notes: All amounts shown are exclusive of any corporate costs, overheads and expenses centrally managed outside DEET.

Source: Northern Territory Government; Taylor 2004.

the relatively low enrolment and attendance rates and the fact that these have been consistently low over the period in question.

Given the current size of the regional school age population of 626, and its expected growth over the next 20 years to 1,140, this historic level of funding has produced a relative lack of educational facilities at Wadeye, including full secondary facilities, when set against other Northern Territory towns with similar populations of compulsory school-age. This anomaly is also reflected in some of the figures on per capita expenditure relative to the Northern Territory average. Three calculations of this are provided by variously using enrolments, attendance, and the compulsory school age population as denominators. Numerator data for the Northern Territory include expenditures on all schools (government and non-government) and both Northern Territory and Commonwealth monies disbursed via Northern Territory government accounts and directly to schools by the Department of Education, Science and Training (DEST). At Thamarrurr, these Commonwealth monies are allocated for a variety of programs including the Aboriginal Student Support and Parent Awareness (ASSPA) program, English as a Second Language—Indigenous Language Speaking Students (ESL-ILSS), the Indigenous Education Strategic Initiative Program (IESIP), and the Kardu Luruth Ngala Tutor program.

Table 24 shows the calculation of relative per capita expenditures in the Northern Territory as a whole and at Thamarrurr based on enrolments at all ages. What this indicates is that spending at Thamarrurr for children enrolled at school is 12 per cent less per capita than for enrolled children in the Northern Territory as a whole (ratio of 0.88). However, Table 25 indicates for those children who actually attend school on a regular basis, per capita funding at Thamarrurr is 28 per cent higher (ratio of 1.28).

In the Northern Territory as a whole, the funding formula for schools that is based on a mix of enrolment and attendance levels works reasonably well as a distributive mechanism, since the enrolment rate among non-Indigenous children of compulsory school age is over 90 per cent (Northern Territory Department of Education 1999: 157–8), and the vast majority of enrolled students in the Territory as a whole (more than 80 %) attend school on a regular basis (Northern Territory Department of Education 2002: 59, 73). The same cannot be said, however, for many remote community schools—so much so that the Independent Review of Indigenous Education in the Northern Territory in 1999 recommended that a comprehensive attendance strategy be developed as a matter of urgent priority (Northern Territory Department of Education 1999: 145). Following this review, DEET has implemented a comprehensive enrolment, attendance and retention strategy. This has included the provision of eight attendance officers, one of which is located in the Wadeye community.

Table 25. Per capita costs of schooling for those attending in the Thamarrurr Region and the Northern Territory: 2000-01 to 2002-03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	349,299,955	2,502,878
Population attending	34,454	192
Per capita \$	10,138	13,036
Ratio (2/1)	1.28	

Notes: All amounts shown are exclusive of any corporate costs, overheads and expenses centrally managed outside DEET.

Source: Northern Territory Government; Taylor 2004.

In the Thamarrurr Region, average school enrolments over the three year period amounted to only 338, a figure which comprised just 54 per cent of the compulsory school age population of 626. What is more, over the same period, only half of those enrolled (57%) regularly attended class (Taylor 2004). These low enrolment and attendance rates have been endemic in the Thamarrurr region for many years and, as per the formula, levels of funding have no doubt matched accordingly. Thus, in terms of the actual quantum spent on education, such a fee for service-type system, as opposed to a population-based funding mechanism, is bound to disadvantage the education prospects of compulsory school age children in remote regions such as Thamarrurr. This is borne out in Table 26, which reveals that for every dollar spent by the Northern Territory government on the Northern Territory average population of compulsory school age, only 47 cents is spent on the Thamarrurr population of compulsory school age.

Table 26. Per capita costs of schooling for the compulsory school age populations of Thamarrurr Region and the Northern Territory: 2000-01 to 2002-03

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	307,383,961 ^a	2,502,878
Compulsory school age population	36,212	626
Per capita \$	8,488	3,998
Ratio (2/1)	0.47	

a. The gross Northern Territory spending figure shown in Tables 24 and 25 applies to all ages including post-compulsory ages. Accordingly, in this table it is adjusted downwards to approximate the amount spent on the population of compulsory school age (5-15). This is done by subtracting the Northern Territory school age population from total Northern Territory enrolments (which also include post-compulsory school ages) and expressing the difference as a percentage of the total. This result (12%) is then the amount by which the gross spending figure is reduced.

Notes: All amounts shown are exclusive of any corporate costs, overheads and expenses centrally managed outside DEET.

Source: Northern Territory Government; ABS 2003; Taylor 2004.

For a complete picture of relative spending on school age populations, it is also necessary to account for monies that the Commonwealth allocates directly to Northern Territory schools via DEST. The overall amount spent by DEST on school education in the Northern Territory averaged \$110 million between 2001–02 to 2003–04 as shown in Table 27. However, data from the Northern Territory government indicate that an average of \$69.8 million of the total amount of \$349 million disbursed by them is comprised of Commonwealth program dollars. We therefore need to deduct this amount from the \$110 million shown in Table 27. This means that the amount spent directly by DEST on school education comprises the balance (\$40.1 million), leading to an aggregate total spending on Northern Territory school education of \$389 million. As for spending at Thamarrurr, some Commonwealth dollars (\$132,230) are already accounted for in the Northern Territory government spending of \$2.5 million shown in Tables 24–26. In addition to this, DEST allocates an amount of \$259,770. Overall, then, total spending on schools in the Thamarrurr region averages \$2.76 million per annum.

Table 27. DEST spending on school education in the Northern Territory, 2001–02 to 2003–04

2001–02 \$'000	2002–03 \$'000	2003–04 \$'000	Average \$'000
126,231	124,263	130,403	126,966 ^a (109,966)

Source: DEST, Canberra.

a. DEST Canberra advise that \$17 million should be deducted from this average and allocated instead to the VET sector, as in Table 34. This produces the figure in parentheses.

Bringing all these schools expenditure data together, we can now calculate final per capita spending estimates using compulsory school age populations as the base. Total spending on Northern Territory schools amounts to \$389 million compared to \$2.7 million at Thamarrurr. However, as in Table 26, this first amount needs to be adjusted downwards to approximate resources directed to students of compulsory school age. This produces an

Table 28. Total per capita costs of schooling for the compulsory school age populations of Thamarrurr Region and the Northern Territory, 2000–01 to 2003–04^a

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	342,730,040 ^b	2,762,648
School age population	36,212	626
Per capita \$	9,464	4,413
Ratio (2/1)	0.47	

a. There is a slight problem of accounting here since Northern Territory government figures are for the period 2000–01 to 2002–03, while DEST figures are for 2001–02 to 2003–04.

b. The gross Northern Territory spending figure shown in Tables 24 and 25 plus \$40 million spent directly by DEST applies to all ages including post-compulsory ages. Accordingly, in this table this gross amount is adjusted downwards to approximate the amount spent on the population of compulsory school age (5–15). This is done by subtracting the Northern Territory school age population from total Northern Territory enrolments (which also include post-compulsory school ages) and expressing the difference as a percentage of the total. This result (12%) is then the amount by which the gross spending figure is reduced.

Source: Northern Territory Government and DEST; ABS 2003; Taylor 2004.

estimate of total spending of \$342 million, as shown in Table 28. Per capita spending in the Northern Territory then becomes \$9,464 compared to \$4,413 at Thamarrurr, which means that for every dollar spent on the average child of compulsory school age in the Northern Territory, only 47 cents is spent by all governments on the average Thamarrurr child of compulsory school age.

Viewed in terms of an opportunity cost assessment that considers the return foregone by not doing something, we argue that monies not spent on children of compulsory school age because they are not enrolled or attending, should still be made available, but for the purpose of ensuring that they do enrol and attend. In the whole-of-government case established here, while low enrolments might reduce the amount that education departments have to outlay on schooling, governments overall can still incur a cost since other budget areas, such as prisons and welfare spending, are likely to end up being higher than they need to be. For this reason, the per capita calculations based on compulsory school age populations are considered the most relevant, and are carried forward into summary calculations of opportunity cost.

Table 29. Per capita costs of DEET Training programs for the working-age and total populations of Thamarrurr region and the Northern Territory: 2001–2003

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	37,136,746	111,945
Population > 15 years	144,908	1,058
Per capita \$	256	106
Ratio (2/1)	0.41	

Source: DEET; ABS 2003; Taylor 2004.

A similar gap between Thamarrurr and the Northern Territory as a whole emerges in relation to per capita spending on training programs (Table 29). The relevant populations here are drawn from those aged 15 years and over. At Thamarrurr, average annual per capita spending on DEET Training programs is \$106, which is just over 40 per cent of the \$256 spent per capita on adults in the Northern Territory as a whole.

NORTHERN TERRITORY DEPARTMENT OF COMMUNITY DEVELOPMENT, SPORT AND CULTURAL AFFAIRS (DCDSCA)

Financial grants to Thamarrurr from DCDSCA have more than doubled in the most recent FY (2003–04) largely as a consequence of IHANT Housing Capital Grants, an increase in the IHANT Maintenance Grant, and an IHANT Special Development Grant attached to Aboriginal Rental Housing Program funding. Other grants to Thamarrurr from DCDSCA include the Council operating subsidy, monies for dump maintenance, capital infrastructure, Thamarrurr Capacity and Establishment, roads, and Financial Assistance Allocations. In Financial Years 2001–02 to 2002–03, total grants averaged \$1.56 million. However, in FY 2003–04 this rose to \$3.7 million due mostly to IHANT spending. Overall, then, average spending over the past three financial years has amounted to \$2.3 million—an amount that includes grants under the *Financial Assistance Act* for general purpose spending and roads from the Commonwealth Department of Transport and Regional Services (DoTARS). Thus, on an average per capita basis for the three financial years, DCDSCA monies convert to \$1,060 per capita at Thamarrurr, a figure that is slightly higher than the Northern Territory average of \$971 (Table 30).

Table 30. Per capita expenditure by DCDSCA* for the total populations of the Thamarrurr region and the Northern Territory: 2001–02 to 2003–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	192,913,682	2,275,189
Total resident population	198,665	2,147
Per capita \$	971	1,060
Ratio (2/1)	1.09	

* Includes Financial Assistance Grants and roads funding from DoTARS as well as \$19 million per annum to the IHANT program from the Department of Family and Community Services.

Source: DCDSCA; ABS 2003; Taylor 2004.

COMMONWEALTH DEPARTMENT OF FAMILY AND COMMUNITY SERVICES (DFACS)

Over the past three FYs (2001–02, 2002–03, 2003–04) DFACS expenditure focused on the Thamarrurr region has risen substantially from \$28,937 to \$2,177,619 in line with DFACS' role as the lead Commonwealth agency in the ICCP trial. In the current FY, these expenditures are provided via the Emergency Relief Program, the Family and Community Networks Initiative Program, the Stronger Families and Communities Strategy, Youth Activity Services, and the Flexible Funding Pool which was established in the 2003–04 Federal Budget as a short term measure to complement the whole-of-government trials. Collectively, these program dollars amounted to \$1.2 million in FY 2003–04.

The single largest DFACS contribution in the same FY (\$1.06 million) was via the Fixing Housing for Better Health (FHBH) Project Stage 3 that applies the 'housing for health' process developed by Health Habitat Pty Ltd. This activity involves a team of people including local Indigenous householders and licensed tradespeople conducting a 250-point check of all health hardware items (electrical fittings, toilets, taps, showers and drains) in each house within the community. The team fixes health hardware items during the survey giving priority to critical health issues such as electrical safety, water supply and waste removal. Items that cannot be immediately repaired or replaced are fixed by tradespeople at a later date. When all repairs are complete, a second survey is conducted to ensure that all the work has been done satisfactorily and that all critical health hardware is functioning in all houses in the community. As well as improving the function rate of health hardware against standardised tests, FHBH projects train and employ Indigenous community members to do basic housing maintenance, establish a system for ongoing cyclical housing maintenance which targets areas of the house that affect health, collect detailed data about housing conditions, and raise community awareness about the relationship between functioning houses and good health.

These expenditures at Thamarrurr average out to \$641,152 over the past three FYs, thereby producing a per capita expenditure of \$299 (Table 31). This is almost four times higher than per capita spending by DFACS in the Northern Territory as a whole, which has averaged \$16 million in recent years.

Table 31. Per capita costs of DFACS programs for the total population of Thamarrurr region and the Northern Territory: 2001–02 to 2003–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	16,049,561	641,152
Total resident population	198,665	2,147
Per capita \$	81	299
Ratio (2/1)	3.7	

Source: DFACS; ABS 2003; Taylor 2004.

COMMONWEALTH DEPARTMENT OF HEALTH AND AGEING (DOHA)

The DoHA's Aboriginal and Torres Strait Islander Strategy, announced in the 1994 budget, included provision for up to 20 Aged Care Pilot Projects over a four year period to trial innovative approaches to service provision. The pilots were aimed at remote and rural Aboriginal communities that have had minimal access to aged and health care services and that often experience difficulties in operating mainstream models.

According to DoHA's own assessment, this flexible model of care has proved successful for medium sized Aboriginal communities. A mix of residential, respite, day and community care is being provided to meet each community's needs. Following the pilot phase, recurrent funding is being provided as Aboriginal and Torres Strait Islander Flexible Aged Care Services.

Wadeye was approved for funding under the pilot in 2001. Services commenced under the auspice of the Kardu Numida Council in June 2002. Ten Community Aged Care Packages (CACPs) previously operated by Kardu Numida Council continued to be run in conjunction with the flexible service.

In the spirit of the ICCP, the Department considered how the funding streams and administrative requirements could be streamlined for transfer to Thamarrurr Regional Council. Accordingly, in late 2003, the CACPs and flexible services were rolled into one flexible service, and a single contract was offered to Thamarrurr Regional Council in March 2004. This provides the service with greater flexibility in the application of the funding for the aged, and reduces the reporting requirements to that of the flexible service only. Additional recurrent funding for expansion of services to cater for the growing need was also approved and offered to Thamarrurr Regional Council.

Thus, current aged care funding from DoHA allocated to Thamarrurr Regional Council amounts to \$525,636 per annum. Funding of approximately \$30,000 per annum for the Home and Community Care Service, jointly funded by DoHA and DHCS, and administered by DHCS, also contributes to the care of the aged and disabled in Wadeye. This is accounted for in the DHCS calculations.

Infrastructure

The current delivery of service involves three sites in Wadeye. The self help centre is used as a day respite centre and Home and Community Care (HACC), and community care services are delivered both within and from this centre. The Respite Centre consists of three units that are mostly occupied by short-term residents and their carers, as they are impractical for long-term stays and wheelchairs. There is also a pension house, which currently

houses five elderly women and one younger woman with a disability. Its location, not far from the centre of the township and the aged self help centre, makes it easier to service the clients at the self help centre.

The Thamarrurr community provides these buildings from existing stock and they have been modified for aged care use. In 2002, Kardu Numida Council was allocated a grant of \$250,000 from the DCDSCA for Seniors accommodation. Accordingly, this amount is accounted for in the DCDSCA calculations.

In a recent capital audit of flexible aged care services conducted by DoHA, the consultant considered that capital works of at least \$250,000 were required to bring the Wadeye buildings up to a suitable standard for aged care purposes. DoHA has allocated \$256,739 for upgrading.

Following discussions with the Kardu Numida Council and DCDSCA, it has been agreed that both Territory and Australian Government funding be applied to upgrading aged care accommodation to a value of \$506,739. A consolidation of the facilities to one location is one option under consideration.

Expansion of the aged care services will bring employment opportunities for local people. Current staffing is comprised of one coordinator, three aged care workers and five community aged care workers supported by CDEP with 'top-up' hours. Training such as the Certificate 2 and Certificate 3 in Aged Care is preferred, but this can be undertaken on the job. There are tasks that can be performed by staff without formal training, such as cooking, driving and cleaning. The upgrading of the current buildings or construction of new units is also expected to bring employment opportunities in the construction phase.

Aged care funding in the Northern Territory is provided by DoHA for a number of programs, as detailed in Table 32 for FY 2003–04.

Table 32. DoHA aged care funding in the Northern Territory, 2003–04

Program	\$
Residential aged care*	13,025,000
Community Aged Care Packages (CACP)	4,415,000
Carer Respite programs*	2,529,000
Aboriginal and Torres Strait Islander Flexible Aged Care Services	2,595,737
Extended Aged Care at Home (EACH) *	795,000
Home and Community Care (HACC)	5,058,000
Aged Care Assessment Program*	795,000
Other support services*	1,898,000
Capital	957,000
Total	32,067,737

Note: Those programs marked with an asterisk (*) are based in the main centres and service clients from remote communities. In the case of Wadeye, old people mainly access residential and respite services in Darwin. A survey of Darwin aged care homes in 2003 indicated that there were nine permanent residents from the Daly River or Port Keats region.

Source: DoHA.

In terms of assessing relative per capita spending, consideration needs to be given to the relevant population that aged care services are directed towards. In the Territory as a whole, this refers to the population aged 70 years and above. Because of premature mortality, if this definition were applied to the Thamarrurr population, only 23 people would be eligible. However, because high morbidity invariably precedes premature mortality, one option here is to reduce the age of eligibility at Thamarrurr to those over 50 years, in line with DoHA practise. Both of these options are provided in Table 33.

Table 33. Per capita costs of DoHA aged care programs for the total population of Thamarrurr region and the Northern Territory: 2001–02 to 2003–04

	Northern Territory (1)	Thamarrurr (2)	Thamarrurr (3)
Annual average \$	32,067,737	555,636	555,636
Aged population	4,801 ^a	128 ^b	23 ^c
Per capita \$	6,679	4,341	24,158
Ratio (2/1)	0.6		
Ratio (3/1)	3.6		

Notes: a. Population aged 70+.

b. Population aged 50+.

c. Population aged 70+

Source: DOHA; ABS 2003; Taylor 2004.

Thus, DoHA aged care spending on those aged 70 years and over is 3.6 times higher in the Thamarrurr region than in the Northern Territory as a whole. However, if the Thamarrurr age limit is reduced (to 50+), the gap is reversed, with funding at Thamarrurr falling below that in the Territory as a whole.

It should be noted that all of the expenditures on aged care shown in Table 33 are also included in the overall spending on health care in the Northern Territory from all sources (Northern Territory, Commonwealth and health funds) as shown in Table 18. They are presented separately here simply for readers who may be interested in the specific aspects of aged care spending.

COMMONWEALTH DEPARTMENT OF EDUCATION, SCIENCE AND TRAINING (DEST)

DEST expenditure in the Northern Territory includes monies to support school education, higher education, vocational education, and research such as conducted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Australian Institute of Marine Science (AIMS) (Table 34). If we exclude the science and research monies, then between 2001–02 and 2003–04 total average annual expenditure amounted to \$200 million on education and training. However, of this amount, the \$110 million allocated to school education has already been accounted for in Tables 24–26 and 28 in the overall analysis of education spending. The remaining \$90 million is spent mostly on higher education, and while none of this is allocated to the Thamarrurr region, an amount of \$147,950 is allocated to Thamarrurr Regional Council for school-to-work transition. Accordingly, the per capita spending for Thamarrurr is \$139, compared to \$622 spent overall in the Northern Territory (Table 35). This produces a ratio of 0.22.

Table 34. Estimated DEST expenditure in the Northern Territory, 2001–02 to 2003–04

	2001–02 \$'000	2002–03 \$'000	2003–04 \$'000
School education ^a	126,231	124,263	130,403
Vocational Education and Apprenticeships	20,377	12,203	19,675
Higher Education	55,714	57,079	54,468
Science	4,744	5,326	12,168
DEST Agencies (CSIRO, ARC, ANSTO and AIMS)	7,890	11,126	8,272
Total	214,956	209,997	224,986

Notes: Estimates only. Expenses included in responses to letters from Senators Tambling/Scullion.

a. DEST Canberra advise that an amount of \$17 million is incorrectly allocated in the these data to the school education as opposed to the VET sector. The average for direct school funding is therefore \$110 million. The average for VET and apprenticeships is \$34m.

Source: DEST, Canberra.

Table 35. Per capita costs of DEST higher education and vocational training expenditure: Northern Territory and Thamarrurr Region, 2001–02 to 2003–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	90,171,000 ^a	147,000 ^b
Population aged 15+	144,908	1,058
Per capita \$	622	139
Ratio (2/1)	0.22	

a. Adjusted as per the note in Table 34.

b. To Thamarrurr Regional Council for school to work transition.

Source: DEST; ABS 2003; Taylor 2004.

COMMONWEALTH DEPARTMENT OF TRANSPORT AND REGIONAL SERVICES (DOTARS)

It should be noted for accounting purposes that DoTARS expenditure reported here is exclusive of allocations to the Northern Territory Government of an average annual amount of \$20.7 million for financial assistance and roads under the terms of the *Financial Assistance Act*. To avoid double counting within the whole-of-government approach adopted here, these amounts are included under spending by DCDSCA (Table 30).

Expenditure in the Thamarrurr region by DoTARS has fallen in recent years following the one-off disbursement of \$608,329 in FY 2001–02, mostly on the establishment of a Rural Transaction Centre at Wadeye, together with a single contribution to the fund for a swimming pool. In the most recent FY (2003–04), expenditure of \$163,265 has been focused mostly on the Roads to Recovery program.

Table 36. Approved annual average DOTARS funding (\$) in the Northern Territory by program category: 2001–02 to 2003–04

Alice Springs to Darwin Railway	41,300,000
National Highways Funding	15,194,633
Roads of National Importance	10,670,504
National Highways Funding	8,381,497
Roads to Recovery	7,835,650
Rural Transaction Centres Programme	793,300
Regional Partnerships Programme	728,838
Regional Solutions Programme	686,151
Airport Quarantine Infrastructure Programme	429,442
Rapid Route Recovery Scheme	335,495
Regional Assistance Programme	267,722
Natural Disaster Relief Arrangements	233,622
Regional Flood Mitigation	97,492
Remote Air Service Subsidy Scheme	24,158
Remote Aerodrome Inspection Programme	10,011
Natural Disaster Risk Management Studies Program	6,647
Financial Assistance Grants	15,352,988
Total	102,348,150
Final Total (excluding Northern Territory DCDSCA allocation)	81,674,483

Notes: Information in this table is based on approved funding, not actual funding. Actual amounts may have been different in certain circumstances, for example where contractual arrangements were not met. The information should therefore be treated as being indicative only. The final total average excludes the average annual sum of \$20,673,667 in Financial Assistance Grants reported by the Northern Territory DCDSCA for the FYs 2002–03–2004–05 which are strictly speaking not DoTARS monies but Northern Territory entitlements under the *Financial Assistance Act*. It should also be noted that the data in the above table are drawn from expenditures in the Solomon and Lingiari electorates with the latter including the Indian Ocean Territories (IOC). To account for this, dollars provided under agreed Commonwealth Grants Commission funding to the IOC have been excluded.

Source: DoTARS, Canberra.

In the Northern Territory as a whole, average annual expenditure between 2001–02 and 2003–04 is estimated to have been almost \$82 million. As indicated in Table 36, around half of this amount was expended on the Alice Springs to Darwin railway project.

Thus, total average annual DoTARS spending in the Northern Territory is estimated at almost \$82 million, or \$411 per head (Table 37). This compares to \$259 per capita in the Thamarrurr region. However, as indicated, a sizeable share of this Territory-wide spending was on the Alice Springs to Darwin rail project and a focus on more historic funding levels may well produce a per capita expenditure ratio closer to parity.

Table 37. Per capita funding of DoTARS programs for the total populations of Thamarrurr region and the Northern Territory: 2001–02 to 2003–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	81,674,483	556,995
Total population	198,665	2,147
Per capita \$	411	259
Ratio (2/1)	0.63	

Source: DOTARS; ABS 2003; Taylor 2004.

ABORIGINAL AND TORRES STRAIT ISLANDER COMMISSION/SERVICES (ATSIC/S)

ATSIC/S expenditure in the Thamarrurr region was relatively consistent over the three financial years 2001–02 to 2003–04 at around \$3 million with the bulk of this (\$2.33 million) directed towards CDEP wages, on costs and capital costs, as well as an average allocation of around \$450,000 to Murin Association for municipal services and minor Community Housing and Infrastructure Program works at Thamarrurr outstations. The only other ATSIC/S expenditures were minor allocations to the Broadcasting for Remote Aboriginal Communities Scheme and Family Violence programs.

Over the FYs 2001–02 and 2002–03, a total of \$3.9 million was expended in the Thamarrurr region on new housing development and upgrades via the NAHS program focused mostly on the development of the new Manthatpe sub-division. These dollars were fully expended by FY 2003–04 with no further allocation.

Overall, these expenditures amounted to a per capita amount of \$2,013 at Thamarrurr (Table 38) that, surprisingly—given that ATSIC/S monies are Indigenous-specific—is only 46 per cent of the per capita level for all Indigenous people in the Northern Territory. Given the rotational nature of much ATSIC/S spending at community level, one possibility is that this gap is explained by the absence of major ATSIC/S initiatives at Thamarrurr over the period in question. However, the main possibility here (NAHS) can be discounted, which suggests two other possibilities—that the relatively small CDEP scheme at Wadeye is responsible, and/or that the establishment of the ICCP trial at Thamarrurr led to a degree of regional cost-shifting involving ATSIC/S expenditure allocations.

Table 38. Per capita costs of ATSIC/S programs for the Indigenous populations of Thamarrurr region 2000–01 to 2002–03 and the Northern Territory 2003–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	248,668,825	4,095,014*
Total Indigenous population	56,875	2,034
Per capita \$	4,372	2,013
Ratio (2/1)	0.46	

* includes NAHS.

Source: ATSIC Annual Report 2002–03: 317; ABS 2004; Taylor 2004.

COMMONWEALTH DEPARTMENT OF EMPLOYMENT AND WORKPLACE RELATIONS (DEWR)

DEWR program activity at Thamarrurr in FY 2003–04 has been established in accordance with directions from the Thamarrurr Regional Council and initiatives arising from the ICCP Priority Working Groups. There are no Job Network or fee-for-service employment service providers at Wadeye. The development of the ICCP precluded the provision of full DEWR mainstream services until such time as directions from the community are provided.

Current activities are based around STEP and Work for the Dole (WFD) Projects. The STEP projects involved expenditure in 2003–04 of \$780,741 and covered projects such as construction, support for the Employment and Training Committee, Thamarrurr Sport and Recreation, Murin Mechanical Apprentices, and Thamarrurr Rangers. The WFD projects include a small art and craft project and the planting of fruit trees, amounting to expenditure in 2003–04 of \$145,000 with approximately 68 participants. Overall, DEWR spent \$5.7 million on STEP programs across the Northern Territory in the same financial year. Thus, combined DEWR spending at Thamarrurr amounted to \$925,741 or \$875 per capita (Table 39).

Table 39. Per capita costs of DEWR programs for the working-age and total populations of Thamarrurr region and the Northern Territory: 2003–04

	Northern Territory (1)	Thamarrurr (2)
Financial Year 2003–04	N/d	925,741
Population > 15 years	144,908	1,058
Per capita \$	78?	875
Ratio (2/1)	11.2	

N/d = No data provided.

? = possible values based on national data.

Source: DEWR; ABS 2003; Taylor 2004.

Unfortunately, it is not possible to establish a precise per capita expenditure by DEWR in the Northern Territory as a whole to compare with this Thamarrurr expenditure. For one thing, it is difficult to establish an estimate of overall WFD expenditure since it is contracted out over a number of financial years and is mostly project driven. More significantly, it is not possible to establish spending in the Northern Territory on the Job Network because it is not DEWR practice to report sub-national level information regarding this program. Reasons provided by DEWR for this position are a need to preserve the competitive nature of the contracting of services, the fact that providers may service multiple regions sometimes across State and Territory boundaries whilst payment components do not directly relate to any one region, and finally, the possibility that potential confusion might arise from comparing employment services payments that include demand-driven elements without contextualising this with local demand for labour. However, national level data were provided by DEWR, and these indicate a gross national expenditure in 2004–05 of \$1.26 billion made up largely of spending on the Job Network, as indicated in Table 40.

Table 40. DEWR national expenditure by program area, 2004–05

Program Area	Expenditure (\$)	Per cent
Job Network	1,005,888,000	79.6
Work for the Dole	177,903,000	14.1
Transition to Work	11,760,000	0.9
Indigenous Employment (including STEP)	68,380,000	5.4
Total	1,263,931,000	100

Source: DEWR, Canberra.

These national level data can be used to provide an indication of possible per capita levels that might apply in the Northern Territory. Thus, in Table 40, the \$1.26 billion expended nationally by DEWR is divided by the ABS estimate of the national population aged 15 years and over in June 2004, which is 16.1 million. This produces a national estimate of per capita DEWR spending of \$78. If this is used as a proxy for spending in the Northern Territory for comparison with per capita spending in the Thamarrurr region, then a ratio whereby Thamarrurr spending is more than 10 times higher than the Northern Territory average can be postulated. However, much would depend on the distribution of Northern Territory spending by program area, and it is likely that the proportional share of Indigenous program spending would be higher than shown in Table 39. All of this, however, remains mere speculation until such time as precise data on DEWR expenditure for the Northern Territory become available.

CENTRELINK

The distribution of Centrelink payments in the Thamarrurr region is shown in Table 41 by payment type and amount for the fortnight ending 4 April 2003. While the total number of customers is shown as 1,080, and while the payment categories are mostly discrete, there is some overlap between family and parenting payments and so the actual number of unique customers is probably fewer than shown here. At the same time, with the shift away from payments by cheque, electronic deposits directly into bank accounts now make up 82 per cent of all payments made at Wadeye. As a consequence, and because of frequent short term population movement in and out of the region, an unknown number of Thamarrurr residents may well be recorded on the Centrelink database with a non-Thamarrurr address and so do not appear in the data shown here. The likelihood, then, is that these data represent a sample, albeit a large one, of the actual Thamarrurr situation.

While the amounts paid vary from fortnight to fortnight, this variation is only slight and the distribution by payment types shown here has been reasonably stable in recent years. Thus, the annualised amounts, while estimates only, are fairly robust. Overall then, an estimated annual total of \$8.6 million is paid by Centrelink to residents of Wadeye and outstations in line with their citizen entitlements. This is 55% higher than a census-based estimate of \$5.4 million (Taylor 2004: 57). While both estimates are likely to suffer methodological uncertainty, it does seem that the census substantially under reported non-employment income.

The greatest share of this amount (\$3.2m or 37%) is allocated as Newstart Allowances for those unemployed. Almost half of all Centrelink customers fall into this category. The next largest group are those in receipt of family payments amounting to \$2.5 million (29% of total payments). In line with the youthful age distribution, pensions account for only 17 per cent of all payments, although Abstudy payments represent a minuscule proportion

Table 41. Fortnightly and annualised Centrelink payments by type and amount for customers with postal address at Wadeye and outstations, 2003^a

	Fortnightly \$	Annual \$	No. of Customers
Pensions	57,770	1,502,026	143
Newstart	125,628	3,266,336	449
Family	94,843	2,465,923	295
Parenting	48,363	1,257,449	146
Carers	1,491	38,763	17
Abstudy	2,235	58,102	30
Total	330,330	8,588,599	1,080

a. Based on fortnight ending 4 April, 2003.

Source: Centrelink, Darwin.

(0.7%) despite the relatively large numbers in eligible age groups. Only 25 individuals over the age of 16 years were in receipt of Abstudy, and only five aged less than 16.

When it comes to comparing these payments at Thamarrurr with the Northern Territory as a whole, difficulties arise due to the fact that Centrelink administrative data are only available for the whole of Centrelink's Area North Australia region that incorporates the Northern Territory together with the Kimberley region of Western Australia and the Pitjantjatjara lands of South Australia. However, given that these adjacent areas have economic and demographic profiles similar to those in the Northern Territory, an assumption can be made that per capita spending revealed for this wider administrative region can be used as a proxy measure for the Northern Territory.

Thus, in Table 42, it can be seen that average total expenditure by Centrelink in financial years 2002–03 to 2003–04 amounted to \$634 million. Given an estimated population in the Area North Australia region in 2002–03 of 235,752 (ABS 2004; Nganampa Health 2002), this converts to a per capita amount of \$2,691. On this basis, per capita spending in the Thamarrurr region is almost 50 per cent higher at \$4,000.

Table 42. Per capita spending by Centrelink at Thamarrurr and in the Northern Territory: 2002–04

	Northern Territory (1)	Thamarrurr (2)
Annual average \$	634,515,114	8,588,599
Total population	235,752	2,147
Per capita \$	2,691	4,000
Ratio (2/1)	1.49	

Source: Centrelink, Darwin; ABS 2004; Nganampa Health 2004; Taylor 2004.

TOTAL REMEDIAL COSTS

Bringing all of these cohort-based per capita expenditures from Northern Territory and Australian government departmental sources together provides for an overall assessment of the relative situation at Thamarrurr in regard to remedial spending. In Table 43, a summary of Northern Territory government spending is provided (including Commonwealth and non-government spending on health and education). Overall, there is a net spending deficit at Thamarrurr of almost \$1.6 million, with all of this accounted for by shortfalls in education and training.

Table 43. Sum of per capita expenditure gap between the Thamarrurr Region and the Northern Territory: Northern Territory Government programs¹

	Per capita (cohort) expenditure gap (\$)	Total expenditure gap (\$)
Custody	532	530,936
Juvenile detention	577	263,112
Community corrections	55	79,970
Courts	14	20,356
Police	N/a	30,879
DCDSCA ¹	89	191,083
Education ²	-5,051	-3,161,926
Health ³	303	606,000
Training	-150	-158,700
Total		-1,598,290

1. Includes DOTARS allocations under the *Financial Assistance Act*.

2. Based on Table 28. Includes Commonwealth expenditure.

3. Includes Commonwealth and non-government expenditure.

Table 44. Sum of per capita expenditure gap between the Thamarrurr Region and the Northern Territory: Commonwealth programs

	Per capita (cohort) expenditure gap (\$)	Total expenditure gap (\$)
DFaCS	218	468,046
DOTARS	-152	-326,344
DEWR	?	?
DEST	-483	-511,014
ATSIC/S	-2,359	-4,798,206
Centrelink	1,309	2,810,423
Total		-2,357,095

Table 45. Total positive and negative expenditure gaps between the Thamarrurr Region and the Northern Territory

	Per capita expenditure gap (\$)	Total expenditure gap (\$)
Positive expenditure		
Education ¹	-5,051	-3,161,926
Health ²	303	606,000
NT Training	-150	-158,700
DOTARS	-152	-326,344
DEST ³	-483	-511,014
ATSIC/S	-2,359	-4,798,206
DCDSCA ⁴	89	191,083
DFaCS	218	468,046
DEWR	?	?
Total positive		-7,691,061
Negative expenditure		
Custody	532	530,936
Juvenile detention	577	263,112
Community corrections	55	79,970
Courts	14	20,356
Police	N/a	30,879
Centrelink	1,309	2,810,423
Total negative		3,735,676

1. Based on school age population. Includes all DEET and DEST school education expenditure.

2. Includes Commonwealth and non-government expenditure.

3. Non-school spending only.

4. Includes DOTARS allocations under the *Financial Assistance Act*.

Table 44 shows the equivalent calculation for Australian government spending (excluding DoHA, which is included under health in Table 43, and DEST spending on schools). This reveals substantial underspending, especially on positive aspects of social policy such as education, training and roads, with higher than average spending on welfare via Centrelink, possibly DEWR, and DFACS. This latter reflects the role of DFACS as the lead Commonwealth agency in the COAG trial at Thamarrurr. Ironically, as noted earlier, by far the greatest deficit appears in ATSIC/S expenditure, with substantial implications for the overall calculation of opportunity cost given uncertainties over where such dollars might now reside within the overall structure of government expenditures.

Combining these Northern Territory and Commonwealth dollars an estimate of the overall relative fiscal situation at Thamarrurr can be produced. Leaving aside data quality issues surrounding the costs of supporting the Job Network and other workplace and labour-related programs in the Northern Territory, this indicates a gross expenditure deficit at Thamarrurr of \$4 million per annum.

Another way of summarizing the pattern of spending is to return to Douglas and Dyll's (1985) schema of 'negative funding' needed to address crime and poverty etc., as opposed to 'positive funding' used to build capacity and enhance opportunity. Thus, the expenditure gap data shown in Tables 43 and 44 are re-organised in Table 45 according to these negative and positive expenditure categories. What this reveals is exactly contrary to the ideal situation. Instead of an excess of positive spending in Thamarrurr to enhance opportunity, what we find is that most such government funding (except for DCDSCA, DFACS, and possibly DEWR) is in fact below the Northern Territory average. Overall, this underspending amounts to \$7.7 million. By contrast, negative government expenditure on the Thamarrurr population is higher than the Northern Territory average in all cases and amounts to relative overspending of \$3.7 million. A pertinent question, but one that is not tested here, is whether there is a causal link between these spending patterns—does higher than average negative spending arise as a consequence of lower than average positive spending?

Table 46. Summary per capita spending ratios by broad functional areas

Broad expenditure category	Ratio
Positive spending	
Education ¹	0.47
Training DEET (DEWR)	0.41 (?)
Health	1.13
Housing, Infrastructure & Community development	1.11
ATSIC/S	0.46
Negative spending	
Justice	3.01
Income support (Centrelink)	1.49

Notes: 1. Includes DEET and DEST expenditure.

In order to provide a preliminary overview of the relative balance of expenditure by broad functional areas in summary form, the foregoing ratios of individual Northern Territory and Commonwealth government department expenditures are combined into broad categories of like-expenditure and presented in Table 46. This comprises a simple grouping of departmental spending according to type, with no account for any overlap between categories such as the fact that much spending on housing and infrastructure, for example, is actually targeted at improved health outcomes. With this caveat in mind, in terms of positive spending, the key areas where Thamarrurr clearly falls behind on a per capita basis are education, training, and ATSIC/S. Health, housing and community development are all more or less equivalent to, or higher than, the Northern Territory average, although given the scale of need in these areas one wonders whether ratios around parity or just above represent a truly equitable outcome as noted previously in national-level studies (Deeble et al. 1998; Neutze, Sanders & Jones 1999).

OTHER OPPORTUNITY COSTS

This section deals with other opportunity costs that arise as a consequence of any move to 'normalise' socioeconomic conditions in the Thamarrurr region. While these might comprise an important component of a comprehensive opportunity cost assessment, they do not fit easily into the methodology applied so far in this report. The first of these additional cost estimates involves an attempt to quantify the financial costs of high mortality (as a proxy for poor health) by calculating the loss of lifetime income due to relatively premature death experienced by the Thamarrurr population. The second is concerned with estimating the financial gains to government that would arise from improving the employment status of Thamarrurr people.

LOST INCOME IMPLICATIONS OF PREMATURE MORTALITY

The relatively poor health status of Aboriginal people in the Thamarrurr region is unequivocal. What is less clear is the economic impact of this. A range of issues arise here. For one thing, shorter life spans mean that working life is, on average, curtailed. What this means for career development and family savings among Indigenous people is a moot point as no research (anywhere in Australia) has tackled this issue. However, one measure that can be attempted, and that begins to place a quantum on health impacts, is an estimate of the total amount of potential life time income lost due to premature mortality. For this purpose we use the methodology applied to the Canadian Indian population by Maxim et al. (2003).

To quantify lost earnings due to premature mortality we first of all establish the age-specific pattern of excess mortality at Thamarrurr that occurs because the local population is exposed to a mortality regime (based on Indigenous rates calculated for the Northern Territory as a whole using 2001 census-based survival ratios) which differs from that observed for the total Territory population. Age-specific average earnings for the Aboriginal adult population at Thamarrurr are then derived from 2001 Census data. Using these distributions, total adult life time earnings can be calculated as the cumulated sum of the latter. These expected adult life time earnings are then multiplied by excess mortality to produce estimates of adult life time earnings lost. As Maxim et al. (2003) point out, this method assumes that the age-specific pattern of earnings is consistent over the life time period, and that death is the only factor affecting earnings, thus discounting any morbidity effects on lost earnings.

This is similar to a life table calculation of life expectancy at birth, only with the focus on potential income expectancy under prevailing mortality. It essentially answers the question: what amount of potential lifetime income do Thamarrurr people forgo because they die sooner than the population in general? In other words, because they were subject to a regime of higher mortality than that experienced by the general population. If we turn to Table 47 for the answer, we can see that the potential lifetime income for Aboriginal people in Thamarrurr aged 20–24 years in 2001 was \$351,030. This is the sum of income that the average adult aged 20–24 years would expect to accumulate over a lifetime. However, because people in this age group die at a rate that is 1.4 times higher than the Northern Territory average, the total amount of potential income lost is the product of these excess deaths and the potential lifetime income. For those in the 20–24 year age group in 2001 this amounted to \$143,931. This same calculation is made for each age group resulting in an aggregate potential lost income among all adults of working age of \$1.3 million.

Table 47. Potential lost adult lifetime income due to excess mortality among the Thamarrurr population, 2001

Age group	Ratio of excess Thamarrurr mortality	Thamarrurr Indigenous average income (\$)	Potential lifetime income (\$)	Potential total lifetime income lost (\$)
20–24	1.41	7,080	351,030	143,931
25–29	1.63	8,409	312,308	151,586
30–34	1.69	8,409	270,263	111,632
35–39	2.89	8,280	228,540	290,212
40–44	3.04	8,280	187,140	215,693
45–49	3.45	8,053	146,308	254,494
50–54	2.50	8,053	106,043	91,947
55–59	2.25	8,591	64,433	41,373
60–64	2.13	8,591	21,478	21,148
Total				1,322,015

GOVERNMENT SAVINGS FROM IMPROVING EMPLOYMENT STATUS IN THE THAMARRURR REGION

While it will be expensive for government to improve the employment status of Thamarrurr people, governments will also experience reductions in a range of costs. In theory, the costs which will be reduced are of three types:

- a) Remedial program costs—these are dealt with elsewhere;
- b) Subsidies for goods and services such as water, electricity, and housing—where the charges are kept well below the costs of provision because incomes are so low that people are unable to pay higher charges;
- c) Centrelink payments will decrease and government income will increase because of tax paid by people who gain employment.

Only the third will be discussed here.

GOVERNMENT GAINS FROM DECREASED CENTRELINK PAYMENTS AND INCREASED TAX REVENUE

An unemployed person receives a range of benefits from government. These may include Newstart Allowance or Parenting Payment, Family Tax Benefit (FTB) parts A and B, and Rental Allowance. The rates of payment depend on family and income circumstances. The value of these payments to individuals, and hence the costs to government, decreases as the individual's employment income increases. Similarly, the tax a person pays increases as his/her income increases. The reduction in benefits paid by government plus the increase in tax received can give a measure of one type of financial benefit to government experiences from an improvement in employment status of the Thamarrurr community.

The calculation of this benefit to government is very complex, as illustrated by the following examples. These examples use the 2003 maximum welfare payment rate and the 2003 tax rates.

Consider two single unemployed persons:

- a) The first has no dependent children. He/she would normally receive a Newstart Allowance of \$10,010 and may receive a Rental Allowance (though not at Thamarrurr) of \$2,454 per annum.
- b) The second has three dependent children. He/she would normally receive a Parenting Payment of \$11,773, an FTB total of \$13,089 (assuming no other maintenance), and no Rental Allowance at Thamarrurr, making a total of \$24,862 per annum.

If we assume that both individuals gain a job at Thamarrurr earning \$20,000 per annum, then the impact on government payments and tax receipts are as follows:

- a) The first person pays tax of about \$2,380 and loses his/her Newstart Allowance of \$10,010 per annum, thus creating a net saving for the government of about \$12,380 per annum.
- b) The second person's position is more complex because the government continues to pay benefits to persons earning \$20,000 per annum, but at a reduced rate compared with those mentioned above. Such a person may continue to receive the following: a Parenting Payment of \$5,043, total FTB of \$13,089, and the possibility of a Child Care Benefit payment (assumed zero in this example). This is a total of \$18,132 benefits, and if tax of \$2,380 is deducted from this, it can be seen that government continues to make net payments to this person of \$15,752 per annum. Thus the saving to government from this person gaining a job is \$9,110 per annum (\$24,862 less \$15,752).

A number of comments can be made about these examples:

- As a general rule, it appears that government savings from placing a person in employment fall as the number of the person's dependants increases. This is because the benefits associated with children continue (though at reduced rates) as income increases. However, it should not be concluded that emphasis be placed on moving single people with no dependants into employment at the neglect of people with dependants, since there is a very beneficial demonstration effect on children of an adult attending work regularly.
- The complexity of a case increases if the recipient of benefits is a couple. A range of more complex examples is presented in Stanley (2004). Although these examples were not designed to represent circumstances at Thamarrurr, they revealed that most of the benefits to government were over \$10,000 per annum, with some cases as high as \$17,000 per annum.
- If a person gaining employment did so by establishing a new business, then any additional Goods and Services Tax paid must be added to the government savings.

Because the benefits to government of placing a person in employment depends critically on the family status of the person gaining the job, the total saving to government from improving employment status cannot be calculated with any certainty unless one knows the circumstances of people getting the jobs. Since this cannot be known at this stage, a guess must be made. It is necessary, therefore, to make an arbitrary guess with a conservative figure of \$10,000 per annum nominated. To this must be added the other savings experienced as mentioned above, to derive the total benefit to government finances.

Government savings of this type have the following interpretation: it means that from the viewpoint of government finance, the government can afford to spend at least \$10,000 per year in order to create jobs paying \$20,000 per year. Thus, if the government decided to create employment conditions at Thamarrurr similar to those for the Northern Territory Indigenous population, it would need to create about 188 jobs paying about \$18,000 per annum. On the basis of this analysis, the government could afford to spend \$1.9 million (188 x \$10,000) per annum, in job creation and job readiness, simply on the basis of welfare payments saved and extra tax collected. This sum would be larger if the reduction in remedial costs and increased charges for goods and services were taken into account.

KEY FINDINGS

The purpose of this study was to estimate the cost to the Australian community of the socioeconomic conditions prevailing at Thamarrurr. The conceptual framework used for the study was a derivative of that applied by the Canadian *Report of the Royal Commission on Aboriginal Peoples* (Canada 1996: 23–49). This approach compares conditions in the community under study with some standard set of conditions. The Canadian study compared the socioeconomic status of the Canadian Aboriginal population with that of Canadians overall. In the present study, the status of the Thamarrurr population is compared with the Northern Territory population overall.

Against this comparison, the cost to society of current socioeconomic conditions at Thamarrurr is calculated as the sum of two opportunity costs.

- The first is the difference between the Thamarrurr output that would have been achieved if Thamarrurr conditions were the same as the Northern Territory overall, and the current Thamarrurr output. That is, it is the amount of the nation's output which is foregone because the socioeconomic conditions at Thamarrurr are poorer than for the Northern Territory overall.
- The second is the additional government expenditure on people at Thamarrurr compared to the level of expenditure that would have been incurred had conditions at Thamarrurr been equivalent to those in the Northern Territory overall. This identifies 'remedial costs'.

Analysis of these costs revealed the value of output forgone to be \$43.8 million, while Indigenous employment incomes foregone amounted to \$26.3 million per annum. In addition to this one might add the estimated \$1.3 million lost lifetime income due to premature mortality along with an estimated \$1.9 million in excess Centrelink payments. Given a resident Indigenous population of some 2,100 people, this means that if Northern Territory conditions were replicated at Thamarrurr, output per person would increase by about \$22,000 per annum and average employment incomes would increase by about \$13,000 per annum.

In the Canadian study, it was found that remedial costs due to the lower socioeconomic status of Indigenous peoples were substantially above zero. That is, Canadian governments spent more per head on the Indigenous population than they did on the population overall. This excess is incurred to assist Aboriginal people to overcome their socioeconomic disadvantage and is the sort of result one would expect in a modern democratic welfare state that has obligations to assist its disadvantaged members.

Remarkably, this result did not apply to Thamarrurr since the total remedial cost was substantially negative (instead of positive) to the tune of \$4 million, or \$1,944 per Aboriginal resident. This means that after accounting for all government dollars and transfer payments expended on residents of the region, far less is spent on them per head than is spent on the average Territorian. Admittedly, this calculation is made exclusive of data on direct spending by DEWR in the Northern Territory that may have raised the deficit higher had the true costs of running the Job Network been factored in. Aside from obvious imbalance in the distribution of former ATSI/S monies, a key factor in this deficit is an apparent gross underspending on education at Thamarrurr of some \$3.2 million per annum, largely reflecting low levels of school attendance. While funding for those attending school is marginally higher than the Territory average, the low attendance rate means that for every education dollar spent by governments on the average child of compulsory school age in the Northern Territory, at present \$0.47 is spent on the Thamarrurr equivalent.

With this conclusion in mind, one might have expected that the remedial costs to government of servicing a growing Australian community that is relatively sick, poorly housed, illiterate, innumerate, disengaged from

the education system, on low income, unemployed, and with a sub-standard communications network would be substantially higher (not lower) than the Northern Territory average. What emerges instead is something akin to Hart's (1971) oft-cited inverse care law in relation to health care needs—'to those most in need the least is provided'. Furthermore, there is a structural imbalance in funding at Thamarrurr with proportionally less expenditure on positive aspects of public policy such as education and employment creation that are designed to build capacity and increase output, and proportionally more spending on negative areas such criminal justice and unemployment benefit. This begs the very important question as to whether this situation of fiscal imbalance actually serves to perpetuate the very socioeconomic conditions observed at Thamarrurr in the first place. If this is so, then clearly discussions between COAG and the Thamarrurr community around matters of shared responsibility must necessarily address these expenditure issues.

Bringing the output and remedial calculations together, the total opportunity cost for Thamarrurr is thus estimated to be \$39.8m per year (\$43.8m less \$4m). While negative remedial costs represent a saving for government, this is ultimately false economy since the proposition here is that it results in the lost output being much higher than it would be if government spending at Thamarrurr were substantially higher. Such additional spending could also improve non-financial (and non-quantified here) aspects of people's living standard in areas such as housing, health, security, and general well-being. Contrary to what might be expected, the situation at Thamarrurr is thus similar to the Type 3 community shown in Figure 1. To be fair, the possibility that this might turn out to be the case was suggested by the findings of the Commonwealth Grants Commission Inquiry into Indigenous Funding in 2001, which concluded that mainstream services failed to meet the needs of Indigenous people to the same extent as they met the needs of non-Indigenous people, and that Indigenous-specific programs were expected to do more than they were designed for (Commonwealth of Australia 2001: xvi).

The fiscal situation in respect of Thamarrurr is not static. If observed social and economic conditions remain the same, then the cost to government of providing income support and other welfare payments, as well as program support in areas of health, housing and CDEP in particular, to say nothing of administering criminal justice, will simply escalate in line with the growth in population at over 3 per cent per annum. On the other hand, if local people had more jobs at higher occupational levels, then they would be able to meet a greater share of the income that governments now provide for. The policy challenge here is to reverse the current pattern of overspending on negative areas of expenditure and underspending on positive areas to create a situation of investment in human and physical capital substantially beyond existing levels. To give some idea here of just how far beyond in one program area alone, the current estimated cost of meeting agreed standards in housing provision for the Thamarrurr region stands at \$52 million, such is the extent of backlogs in housing and related infrastructure. Thus, it is important to recognise that policy options for addressing the situation are not cost neutral—expenditure will need to grow either in response to declining socioeconomic status, or in order to enhance it. Whatever the case, a sizeable fiscal response is unavoidable.

The main way of tackling this problem, both at the regional and national level, is to invest in job creation and human capital formation. Job creation will require governments to fund major infrastructure and housing works, to adopt a preferential tendering and employment policy, and to develop businesses that export goods and services outside the Thamarrurr community. Human capital formation will require efforts to enhance appropriate education and training facilities and services, as well as improvements in health and housing. At the same time, the pressing need is to stimulate labour intensive economic activity given the size and growth of working age numbers against the limited scope for mainstream work. Opportunities exist here via a much expanded CDEP scheme to support otherwise non-viable activities, via the proper resourcing and development of a marketable arts and crafts industry, and via enhanced support for caring for country land and sea management activities

associated with locally expressed preferences to reside on country. In short, a recognition following the thrust of the MCATSI Steering Committee Economic Development Framework (2004) that the first step to development is to raise the overall level of participation in economic activity across a broad front, including in the customary sector. All this will be costly for government, but the opportunity cost estimates show that there are considerable productivity gains to be had from improving the socioeconomic status of people at Thamarrurr.

Finally, as a COAG trial, the exercise involving the Thamarrurr Regional Council, the Northern Territory government, and the Australian government (as represented by the Department of Family and Community Services), has demonstrated some of the possibilities presented by whole-of-government approaches to regional service delivery and policy application. The present study shows that where government effort is consolidated, comprehensive data of relevance to the analysis of regional development issues can be extracted from otherwise discrete administrative systems. Having invested in establishing this baseline of opportunity costs for the Thamarrurr region, it is vital for the monitoring of government performance that these mechanisms are maintained to track such costs on a regular basis. At the same time, it is important to note that this process is not easily pursued, nor is it necessarily precise. Some departments have difficulty extracting expenditure data on sub-populations, even for the Northern Territory as a whole, while issues of separation between the sources of funding (mostly Australian government) and the disbursement of program dollars (mostly Northern Territory government) loom large. Also problematic is the practical application of the conceptual divide between fixed and marginal costs in determining appropriate expenditure data. However, all of this aside, it is likely that demand for regional data of this nature will grow in line with the application of Shared Responsibility Agreements. In this event, greater attention should be paid to adapting administrative systems to enable more widespread monitoring of government activities at these new scales of analysis.

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