Sustainability in the National Development Plan 2007-2013

CAPITAL INVESTMENT IN KEY SECTORAL AREAS[1]

16 October 2006.

Recommendations from Comhar – the Sustainable Development Council (SDC)[2]

[1] Including households, transport, energy, agriculture and rural development, tourism, industrial development, forestry and the marine.

[2] These proposals follow the general recommendations submitted by Comhar SDC to the Department of Finance on 20th September 2006.

EXECUTIVE SUMMARY 1 (Sectoral)

Activity	Challenges	Actions	Results
Agriculture and Rural Development	Income, entrepreneurship, political, environmental.	Payment for environmental services, promotion of competitive advantage - invest in knowledge-rich farming and rural economy, and enhanced communication, notably broadband.	Pool of internationally competitive farmers in global and niche markets, dynamic off-farm economy, cross compliance, high quality environmental services.
Forestry	Inability of softwoods to secure high value markets, need for hardwood to produce to veneer quality, lack of transparency re environmental and recreation services.	Promote Sustainable Forest Management (SFM) for small holders, identify and pay for public goods, including carbon sequestration, biodiversity conservation, and recreation services, development of forest inventory, R&D.	Softwood and broadleaf farmers who can compete, development on non-wood products and services, high quality environmental services.
Transport	More cars and freight chasing limited road capacity, with consequent rising greenhouse gas and air pollution, congestion and associated waste of time increased stress and shrinking labour pools.	Integration of land use planning and infrastructure provision with traffic nodes, increased investment in rail, busses, pedestrian and cycle ways, investment in demand side management, making roads bus friendly, join the cities outside Dublin, linked to National Spatial Strategy, and R&D.	Enhanced mobility for all, combined with reducing emissions of greenhouse gasses and air pollutants, reduced obesity and other sedentary health effects. Creation of cities with economies of scale and scope and enhanced global competitiveness.
Energy	Increasing total and per capita consumption (electricity and transport) rising emissions, high import dependency, low use of renewables.	Invest in: electricity interconnection to UK, the national grid to expand potential to 'take' more renewables, facilitate more wind power, develop potential of biomass for heat and electricity, R&D focussed on technical, economic and environmental issues, carbon storage and sequestration, Demand Side Management as top priority, focused on all investments that provide private and public gains that exceed costs, including public buildings and housing.	Ireland moves from laggard to European leader in development and implementation of renewables, and of energy efficiency.
Tourism	High cost destination demands that we move up the quality and value diversity chain to survive. Dependent on environmental endowments not controlled by the industry. Coast in particular threatened by developments.	Identify carrying capacity in key areas and act on the implications. Support investment in eco-tourism products and services, invest in implementation requirements of Waste Water and Water Framework Directive to help deliver high quality base for water related activities. Support development and implementation of Coastal Zone Strategy to ensure crucial features of the resource protected. Continue to conserve key build and natural heritage features.	A high quality tourism product and services rooted on a resource and environmental asset base that is protected for now and the future.
Industry	High costs and difficulties of scale and scope outside Dublin agglomeration. Need to make quality of people and place a byword, and provide constant innovation.	R&D crucial to provide knowledge-based edge, reward for achieving and maintaining in independently audited environmental standards, investment in eco-parks and in high quality waste management.	Dynamic industrial sector where productivity and innovation gains exceed rise in costs, based in a high quality environment, and reducing the volume and toxicity of waste emissions over time.
Households	Achieving neighbourhoods that are safe, facilitate walking and cycling, provide ready access to employment, and enable participative and informed citizens.	Invest in making National Spatial Strategy a reality so new city regions and rural areas can have high quality of life and compete. Invest in information provision that is relevant, timely, and tied to location, provide resources to community groups, and skills in conflict resolution and negotiation, and resource the outcomes of the Taoiseach's Task Force on Active Citizenship.	Engaged, committed, informed and empowered communities.
Marine	Peaking of marine fishery, pressures on coastal spawning and other assets, limited knowledge of the marine resource, decline in some stocks.	Invest in research discovery programmes, Seabed survey, and in ocean energy research, Ireland as a landing destination, conservation of key species, notably Atlantic salmon, development and implementation of Coastal Zone Strategy.	Ireland as a leading knowledge centre in marine research, coastal communities that understand options, conserved salmon.

EXECUTIVE SUMMARY 2 (Cross Cutting)

Activity	Challenges	Actions	Results
Sustainable Development Fund (SDC)	The need to address the many situations where there are challenges across sectors and communities that would benefit from integration to meet sustainability objectives.	Invite bids on a competitive basis for projects from local authorities, enterprises, communities, NGOs that in design and execution will make a substantive contribution to meeting sustainability objectives.	A growing pool of experience and achievement on the ground that epitomises best practise in regard to sustainability, including reduced pressure on environment, high quality of social and economic life.
National Spatial Strategy (NSS)	Plans need to move to performance, if critical mass is to be achieved outside the Dublin conurbation.	All investment, but especially transport, need to support linkage and reduced pressure on environmental and other endowments and the provision of high levels of infrastructure at transport nodes linked to NSS.	Cities outside Dublin that are linked to the point that they can and do act as one conurbation. Reduced development pressures in the Dublin region, and improved quality of life.
Good Governance	Ensuring that organisations implementing the NDP have the requisite skills and resources to deliver major sophisticated programmes. Specification and monitoring of outputs.	Invest in whatever organisational and skill development necessary, and ensure there are credible and measurable indicators of performance.	Elements implemented on time and within budget, with indicators that are measurable and are measured which will allow periodic adjustment as Plan implemented.
Research and Development	In most areas of the economy and society, there is a deficit in innovation and knowledge led activity. As costs rise, this will inevitably result in decline unless the deficit is addressed.	Build on progress to expand the R&D portfolio to address all phases of activity. Sustainability should be a strand of research activity in all programmes.	A society that generates and tests new ideas systematically, and converts those that make sense into services and products that enhance quality of life nationally and globally.
The Right Price Signals	Many of the key environmental and other values that are important are not traded through markets and therefore do not have a 'price'. Without such prices these ecological and other services are not given parity of esteem in the evaluation of choices	There are internationally validated techniques for developing proxy prices for goods and services not traded in markets. Investment in the development of such will improve the ability to assess value for money. Separately recognising environmental capital, as proposed in our earlier submission, is part of the process of providing coherence and transparency	Integration of environmental and other services not valued directly in markets will be incorporated into programme design and assessment across a range of sectors.
Information	As citizens, politicians, policy analysts, business people, some information that is gathered is not accessible, and other key information is not collected. This results in suboptimal decisions.	Invest in finding out why data collected is not accessible and what gaps are crucial and need to be filled. This will provide the basis for investment.	The Knowledge society will be manifest.
Cities	Cities are the drivers of economic and cultural innovation, the hubs.	The various NDP related initiatives need to be shaped by the city leaderships to ensure that the whole is greater than the sum of the parts.	Dynamic and successful cities, economically, socially, culturally and environmentally.
Environmental Endowments	We have key requirements to meet in regard to Wastewater, Water Framework, Biodiversity, Air quality and Wastewater Directives.	It makes sense financially and environmentally to meet these as integrated components of sectoral policy. So each sectoral investment programme should be 'scanned' and action taken where opportunity arises.	Move towards environmentally sustainable performance, meet EU targets in time, and at minimum cost.

PREFACE

On the 21st September last, Comhar – Sustainable Development Council (SDC) submitted to the Department of Finance recommendations on 'Sustainability in the National Development Plan 2007-13'. The recommendations, followed the template proposed by the Department of Finance (DOF) - Broad Content, Preparation Process and Reporting Arrangements of next NDP - as provided to Comhar SDC, and were approved by the Comhar SDC council on 20th September. We advised that the recommendations on 'Capital Investment in Key Sectoral areas' would be submitted as soon as possible following the Comhar Conference "Sustainability in the National Development Plan 2007-2013" on 4th to 6th October. The conference addressed how specific sectors within Ireland – industry, energy, transport, agriculture, forestry, tourism, marine, and households – have performed economically, socially and environmentally to date, and the options available for enhancing performance over the life of NDP 2007-2013. Briefing papers were prepared by experts in the particular sectors, which provided a framework for the Conference discussion on each sector and are available from the Comhar SDC website[3]. In each session the format consisted of a presentation by the briefing paper authors, followed by a discussion of the investment priorities for the next NDP with a selected panel of stakeholders and the audience. The resulting recommendations have been gathered together and are now set out in this document.

CONTENTS

[3] http://www.comhar-nsdp.ie/conference2006/index.html

1. General Principles

The NDP for 2007-2013 provides an exciting opportunity to take advantage of the economic success of the past decade and to ensure that Ireland continues to grow but that it does so in a sustainable manner. Sustainability implies implementing the three objectives of economic prosperity, social equity and cohesion, and environmental protection. The pace of recent economic growth may have implications for environmental quality and societal welfare. Several researchers (Clinch et al. 2006; Walsh 2006) have shown that economic growth is not synonymous with well-being and the question therefore arises – what investments should be undertaken in order to ensure sustainable growth and improved well-being for all?

Ireland has become a wealthy country and rising costs now threaten our competitiveness. It is imperative that competitiveness be improved and therefore investment over the next seven years should make this one of the priorities. The new NDP can assist in increasing competitiveness by reducing costs in some areas, such as transport, communication etc, while improving quality in others for example education, labour skills, RD&D, infrastructure. In the coming years there is a need to continue to improve environmental quality in Ireland. Research for Comhar (Clinch et al. 2006) shows that environmental amenities are significantly related to life satisfaction and quality of life in Ireland. An appealing environment is necessary to attract a better skilled labour force. In addition, Ireland must meet several international environmental commitments during and at the end of the term of the next NDP. It is appropriate that NDP investment address these specific environmental issues and take account of them simultaneously with infrastructure investment, in particular the Water Framework Directive, Biodiversity Directive, Climate change mitigation and adaptation, air pollution (National Emissions Ceilings, Convention on Long Range Transboundary Air Pollution on Heavy Metals), Waste Directive.

Comhar SDC notes that there have been calls to subject the NDP 2007-2013 to ex-ante environmental assessment and supports this call. We hope that as the more detailed programme measures under the new NDP are developed they should be subjected to such assessment to ensure their compatability with sustainability objectives, notwithstanding the statutory obligations arising in relation to Strategic Environmental Assessment. A further strategic priority of the NDP 2007-2013 is to improve its social impact. This may involve investing in measures which bring people together and support the less well off. Communities play a vital role in this process and require support both infrastructurally and institutionally.

There are several cross-cutting themes that arise as recommendations across all sectors and are important to emphasize in their own right.

- Information is crucial - both its gathering and dissemination. Two situations are evident; some data are gathered at tax payer expense, but are not readily accessible for analysis; secondly, in many areas data gaps exist and therefore it is difficult to carry out the ex-ante and ex-post analyses needed to implement evidence-based policy. Another dimension of information is its dissemination so that consumers and businesses can make informed and rational choices. In another forum, Comhar SCD intends returning to this issue.

- Getting the price signals right in order to drive the ‘right’ decisions can support this. Consumers and businesses require information and pricing incentives to appropriately value public good contributions such as the environment and social capital.

- The R&D imperative - the generation of new knowledge. All sectors require investment in R&D and training to generate human and knowledge capital in order to improve competitiveness and balanced regional development.

- Good governance is needed to effectively administer investment and develop new ideas. The institutional tools to do so should accompany any investment project under

NDP 2007-2013. Progress and success should be measured by monitoring outcomes rather than inputs on a regular basis with a set of sustainability indicators. As already indicated in the first part of this submission by Comhar SDC to the Department of Finance, Comhar SDC would be glad to play a role in this task assuming that the data gathering and management mechanisms are in place to make such a role useful; Comhar's Principles for Sustainable Development could form the basis for the development of over-arching indicators for the new Plan.

- Overall, the individual contributions to the Comhar SDC conference on sustainability and NDP have highlighted the necessity to align investment priorities under the new NDP to implementation of the National Spatial Strategy for land use. As a small country, investment in infrastructure and projects must be clustered in order to achieve economies of scale and scope and the related ecological and social gains. As recognised by the Department of Finance template, investment should also link the five horizontal issues of balanced regional development, the promotion of social inclusion, environmental sustainability, the All-Island dimension, and the EU Lisbon Process.

- Comhar SDC proposes that a **Sustainable Development Fund (SDF)** be established, which would be reserved for projects that specifically substantively promote some aspects of sustainability. This fund should be made available on a competitive basis for investment in enterprises, activities and communities within and across sectors that achieve demonstrated improvement in environmental performance – with a particular focus on meeting some combination of the requirements associated with the Water Framework Directive, Biodiversity Directive, Climate change mitigation and adaptation, air pollution (National Emissions Ceilings, Convention on Long Range Transboundary Air Pollution on Heavy Metals), Waste Directivewhile also advancing competitiveness and social cohesion. For example, funds could be linked to firms achieving certification under an independent environmental or energy-saving scheme, the establishment of an eco-habitat or carbon neutral community, the rehabilitation of towns that have recovered their streets because they have been bypassed, etc. Some of the specific sectoral recommendations described below could qualify for finance from the Sustainable Development Fund SDF). If this idea commands support, Comhar SDC will be pleased to advise on its detailed design and implementation.

We set the stage for each sector by identifying the challenges, make recommendations and conclude with the results that can be expected. These recommendations reflect thematic priorities. We do not specify an amount of investment and the results are expressed qualitatively. Quantification exceeds the time and other resources available to us.

2. Specific Sectoral Recommendations

2.1 Agriculture and Rural Development

Challenges

Farmers in Ireland have displayed courage in opting for direct payments rather than input and output support for their activities. This simultaneously provides them with a regular income, and (in theory at least) reduces the bureaucracy and increases their freedom to make decisions concerning their enterprise. But it also poses challenges: the prices for their core outputs – milk and beef – are likely to fall in real terms over time, while the costs of their inputs – notably labour and land – already at a very high level, are unlikely to fall, and – at least as regards labour and energy – are likely to increase. At the same time they have to meet the growing costs of complying with traceability, environmental and safety requirements. The key challenges now facing agriculture and rural development are:

- *Income challenge* – dependence on direct payments;*Entrepreneur challenge* – land prices preclude new entrants;*Political challenge* – majority of funding (over 60%) will be contributed by Irish tax payers; it will not be politically sustainable to continue with direct

payments funded by the general tax payer – often to asset millionaires - for no transparent and agreed services;
- *Environmental Challenge* - climate change, biodiversity, air quality (ammonia), eutrophication (phosphorous).

The core off-farm rural employment opportunities in construction will diminish as the demand for houses and other buildings tapers off and falls. Four categories of farmer – which will often overlap - will emerge from this context:

1. Those who succeed in competing - in terms of cost and quality – with the best in the world in the production of commodities, including milk and beef. To do this, they will need scale, Ryanair-like cost control, access to excellent transport and IT infrastructure, and management skills comparable to the best of the private sector. This relatively small group will need support to make this transition to be able to compete with the best in Argentina, Brazil and elsewhere.
2. Those who succeed in competing – in terms of cost and quality – with the best in the world in the production of differentiated products and services that service growing niche markets that do not have to compete directly with major international producers. For this group, cost control is also crucial, but product development, creativity, marketing, branding and delivery skills are what give them core competitive advantage. This will be highly diverse, ranging from organic food producers, developers of relatively new food lines such as venison, growers of 'slow food' with a focus on flavour, and those who enter the energy market.
3. Those who are part time farmers, with their primary income deriving from off farm activity, but wish to stay involved on the farm. These – sometimes disparagingly referred to as 'hobby farmers' – have an important role in maintaining output and in importing ideas - e.g. in regard to equipment, management techniques, product development, IT - from the non farm world. Numbers are likely to grow over time. They may also be the key providers of farm-related tourism activities.
4. Those who are in farming full time, but are not interested in either the development of internationally competitive farming, off farm work or the development of niches. They will move out over time and therefore their numbers will fall.

For all categories, the following are crucial to their ability to succeed:

Recommendations

1. Payment for Environmental Services

- High environmental quality is a key pre-requisite for success in all markets. Without it, a key comparative advantage is lost, and once gone, is very difficult to recover. Payments should be linked to the value of environmental services provided, including contributions to: Water Framework Directive – reducing nutrient emissions
    - Biodiversity Directive – conservation and creation of habitats
    - Climate Change mitigation and abatement – reductions in greenhouse gas emissions (methane, Nitrous oxide)
    - Air Pollution reduction – ammonia
    - Waste Directives – reduced volume and toxicity of throughput.

- Extension of REPS[4] to include positive habitat management/creation measures for more commercial farmers, integrated with Local Authority habitat management practices, e.g. hedgerow maintenance, and inclusion of more such measures within core REPS.

2. Promoting Competitive Advantage

Farmers need:

[4] The term Rural Environmental Protection Scheme (REPS) is inadequate to reflect the environmental contribution of farmers. They provide a range of environmental services, and therefore 'Rural Environmental Services Programme (RESP)' would be more appropriate.

- Easy and low cost access to markets – from the local farmers' market to export markets - using all transport modes. Our recommendations under 'transport' are very important if this mobility is to be achieved.
- New knowledge based farming (competitive and environmental services) with R&D, demonstration and (especially) risk capital;
- Innovation in cost reduction and product and service development;
- Internet access – it is difficult to imagine how farming and rural societies can succeed over the next decade unless they have immediate and efficient 24 hour access, under their control and with the knowledge to use it, to the best information on inputs and markets, and can communicate locally and globally with customers and information networks;
- Capacity building, with continuing upgrading of skills and abilities;
- Investment in human resources to create new off farm enterprises and infrastructure;
- Access to lower cost land. The current land price boom provides substantial capital gain to some farmers, but at the cost of ensuring – if it continues – that no new entrants will enter the profession, and viability in all of the first three categories above will be diminished perhaps to the point of extinction.

The National Development Plan 2007-13 cannot meet all of these challenges, but it can make an important contribution by, for example[5]:

Process Investment Priorities

- Supporting new knowledge based farming (competitive and environmental services) with investment in R&D, demonstration and (especially) risk capital;
- Investment in human resources to create new off-farm enterprise and infrastructure;
- More location-specific measures akin to corncrake scheme in Shannon Callows;
- Implementation of a plan for biomass, which takes into account economic and environmental assessment;
- Implementation of a plan for public access that is not solely dependent on specific designated paths (Comhairle na Tuaithe on its own has failed to do so). The prospects of a dynamic rural tourism and economy will be seriously inhibited unless this challenge is successfully met.
- Free environmental service including nutrient planning, including measurement of farm P levels, and wildlife or environmental advice that is not dependent on farm planning consultants, similar to FWAG in UK.

Physical Investment

- Improved slurry storage capacity, including biofilters (small-scale willow/Micanthus plantings);
- Support for provision of broadband to every household.

Results

These investments will help ensure that farmers who wish to compete seriously in local and global markets will have the opportunity to do so. There will be transparency as regards the environmental and related services that farmers are delivering for payments, and this will help ensure that such payments continue and that the services being supported will be delivered. It will help farmers achieve cross compliance – ensured by the requirement that continued good standing as regards environmental compliance is necessary to be eligible for support payments. These measures support the horizontal issues of balanced regional development, promotion of social inclusion, and environmental sustainability.

[5] With reference to the briefing paper by Bullock and Styles (2006).

2.2 Forestry

Challenges

There has been considerable progress in terms of developing the forestry estate in Ireland, and in expanding the associated volume of wood output (Byrne and Legge 2006). The forest owned by the State is managed on its behalf by Coillte. In addition to providing the bulk of the wood output, it also provides the main arena for forest based outdoor recreation, including orienteering and hill walking and also manages a number of important habitats. Most of the recent afforestation has taken place on private land, so the ownership balance is shifting away from the State. As regards the wood industry, key challenges include: technical constraints that thus far mean that Irish wood is not being used in the rapidly growing timber frame sector; increasing supply from Eastern Europe is putting – and will continue to put – downward pressure on prices; challenges in producing high quality (veneer) products from the hardwood planting on private land – which comprises about 15% of the total.

The following four categories of forest owner will be involved:

1. Coillte as the dominant holder of wood stock and as the main provider of both wood supply and non market recreational and other services.
2. Private owners whose primary interest is in becoming successful commercial suppliers of wood to the processing market, and other products such as Christmas trees,
3. Private owners – who will also in many cases be part time farmers – who will be interested in generating some income from the forest, for a range of activities, including recreation and tourism
4. Private owners who have only become involved to 'harvest the grants' and are likely to allow their woodlands to develop without any specific or pro-active management.

Recommendations

1. Ensuring Environmental Performance

- Sustainable Forest Management (SFM) planning should be supported by regularly updated forest inventory data – see below – and ongoing research related to all aspects of SFM. Traceability is now a feature of the wholesale and retail wood product markets. SFM is a brand that is now a pre-requisite for servicing international markets. Without it the sector has no commercial future, so investment to sustain this is required. This will become a challenge as the small lots planted over the past 20 years begin to be harvested; the costs per unit of achieving certification will be substantial and investment is required to reduce these costs.
- Financial incentives will be required to ensure that forestry continues to provide public goods, notably carbon sequestration, biodiversity conservation and recreational services. Promotion of public goods should be integrated into nationally accredited forestry training courses and technology research and development. The annual premium should be recognised as a payment for these services, and it should be adjusted up or down depending on their quality and extent.
- Carbon sequestration in forests will make a significant contribution to the delivery of national commitments under the Kyoto Protocol. Further research is required to strengthen national reporting, particularly in relation to soil carbon, peatland forestry and broadleaf species. Such research is also necessary if forest farmers or others are to be paid for this carbon capture. The amount of capture, the net losses (especially relevant on peatland soils) are very site-specific. The environmental contribution of forests will require further government support. The participation of Irish forests in the EU Natura 2000 programme, which provides funding for areas that have been designated as special areas of conservation, is below its potential. Support the delivery of quantified and verified delivery of environmental services including:
    - Water Framework Directive – reducing emissions of nutrients and particulates to water
    - Biodiversity Conservation – protection of habitats

- Climate Change mitigation and abatement – de-carbonisation Air Pollution reduction – PMs and NOxWaste Directives – reduced volume and toxicity of throughput
- Provision of Recreation services: These need to be documented, and recognised. They are an important contribution of the public forest estate managed for the State by Coillte.

2. Commercial

- Broadleaves grown for commercial purposes are unusual in Ireland, in spite of the fact that – suitably established and managed – they can produce very highly valued products. Special capacity building and other support are needed if those farmers who wish to become professional hardwood tree farmers are to succeed.
- The same is true for those with conifers, although the work is less skill demanding and less labour intensive.
- Research must continue to allow Irish soft woods to achieve higher valued markets, and to support the small but potentially valuable hardwood tree-using industry. If this is not done, the commercial viability of both forms of tree farming will be threatened.

3. Bioenergy

- Additional financial support for bioenergy is required if forestry is to meet its potential to play a significant role in the provision of renewable energy in Ireland. Support is required to underpin the role of existing forests and wood processors in meeting demand for wood pellets and other bio-energy needs.

4. Information and Capacity Building

- The ongoing National Forest Inventory will provide an essential resource in planning and executing SFM. The inventory should be updated at 5-10 year intervals to provide up-to-date information for management and planning.
- Commitment to longer term multi-annual budgeting for the sector and continued investment in afforestation; this should be accompanied by comprehensive designation of forest land-use at a national level and the encouragement of investment in forestry by private sector companies and pension funds. A tree's commercial and environmental performance is defined by the appropriateness of the match between the site and the species. 'The right tree on the right site' means having detailed knowledge of sites, and of the performance once a forest is planted.
- Continued development of training and education programmes for forestry professionals, farm foresters, forest operatives and contractors.
- The target of 30 per cent of new planting as broadleaves has not been met. If payment as proposed above is based in part on the provision of environmental services this is likely to involve more broadleaved forests, but the mix should be driven by services provided, not species rules.
- Investment in research, demonstration and development (R&D) is necessary in all aspects of the wood-chain, including process and product R&D, training and information to support the above.

Results

These investments will ensure that those who wish to be serious tree farmers have the opportunity to be so. For the general public, there will be some transparency as regards what the public interest is achieving in exchange for the payments, and a commitment that those valuable environmental and recreational services will be provided. It is likely to make the case for more broadleaved forests. For the forest products industry, if the R&D delivers, it will allow it to escape the low end of the market.

2.3 Transport

Challenges

The rapid rise in the number of passenger and freight vehicles on Irish roads will continue to cause challenges in the future. The main challenges in this regard will be the continued increasing dependence on oil, the related rise in greenhouse gas and NOx and particulate emissions from the sector, and the increase in congestion, particularly in urban areas (Douthwaite et al. 2006). Transport 21[6] provides an exciting portfolio of investments to transform our mobility. But there are complementary actions that are needed if it is to fulfil its full potential.

Recommendations

1. Integration of transport and provision of land related services

- Funding must be made available to integrate land use planning and transport provision. An underlying root cause explaining the increased use of private car in Ireland is the dispersed settlement pattern which itself is a product of rapid growth in population and incomes, the search for affordable housing, the absence of affordable clusters of housing or sites available adjacent to schools, and public transport, and life style preferences. There has been substantial greenfield development far from urban areas without the development of associated transport systems to facilitate commuting to employment centres and associated social, health and education services. The integration of planning and future transport systems is a fundamental requirement in order to arrest this trend – capacity building, support for provision of water supply, waste treatment, schools and other infrastructure at key transport nodes should be developed to appropriate scale and scope. This should not be demand driven. If the supply if provided, the demand will follow.
- This land use related funding should be 'packaged' with the transport budgets, so that they roll out in the appropriately efficient sequence.
- This will take some of the demand pressure for non farm uses of rural land, with a consequent reduction in prices, and the creation of opportunities for farm expansion for farming and for new entrants, both of which are at present virtually impossible, and this threatens the future viability of commercial farming.

2. Support for Pedestrians and Cyclists

- Walking and cycling are important from several perspectives - health, social, environmental and economic – and represent an integral component of mobility; there should be a bias in investment to support where at all possible this category of mobility because it yields so many public good health and environmental benefits. It seems unlikely that we can be successful in addressing the rapid rise in obesity levels in children if we do not provide the infrastructure that makes it easy for them and their parents to walk and to cycle. We note that cities such as Brussels and Vienna are now providing 'pay as you go' bicycle facilities and services, which meet the need of both locals and tourists for short distance cycles. Ireland is far from being state of the art in this regard, and all suffer the consequences of more congestion, more air pollution and greenhouse gas emissions, and poorer experience for tourists. Also, the potential for tourism-driven, longer cycle and hiking experiences, e.g. in parallel with the canals, are not being seized.

3. Traffic and Demand Side management – maximising the payoff to the investment

- Investment in demand-side management infrastructure is necessary to ensure that the existing transport road and rail assets and the €34.4 billion to be spent in 'Transport 21' are effectively used by all modes. This is not something that should be left to wait until 'the public transport infrastructure is in place'. Motorists pay huge congestion charges today in the form of time wasted and increased tension and frustration, and receive nothing in return except more congestion. The plans to maximise the payoff to the €34 billion investment in transport infrastructure need to be put in place as the infrastructure is put in place.

[6] See http://www.transport21.ie/ for details.

- Invest in Intelligent Transport Systems (ITS) - There are so-called soft measures under the category ITS that would greatly improve the efficiency of both freight and private transport systems. ITS measures include the use of computer, electronic and communication technologies and transport management systems to improve efficiency of surface transport. Measures such as electronic integrated public transport ticketing and adaptive traffic signalling are cost-effective to implement yet can have a significant impact on road speeds in urban areas and hence congestion and emissions. On the road freight transport side good logistics management has been shown to significantly reduce congestion from goods vehicles.

4. Rail and Public Transport

- Rail transport: the Strategic Rail Review[7] recommended that investment be continued in improved passenger rail services, particularly now that large-scale investment has already been undertaken in rail infrastructure. Reduced journey times, more frequent services, and better timetabling are needed to enable rail services to compete with road transport. Good estimates of the public good values and services involved – congestion, air pollution, greenhouse gas emissions etc – would allow an informed choice to be made between modes. Freight rail transport has not received investment to the same extent as passenger rail services to date. The Strategic Rail Review stated that some routes for rail freight might not be commercially successful. However, the viability of many routes should be reassessed in a transparent manner in terms of their potential to provide a net social benefit and a subsidy granted where the service is identified as producing a public good. This is important in light of the rapid rise in recent years in goods vehicles on Irish roads, which is straining new infrastructure, causing congestion, and damaging the environment. The full costs and benefits of road vs. rail freight must be estimated and a decision made regarding the latter;
- Investment in public transport: there has been under-investment in public transport in the past. However under the Transport 21 scheme €16 billion of the total €34 billion will be invested in public transport. It is clear that priority should be given to linking the public transport systems currently in operation. The remarks above about the packaging of land use infrastucture etc at the nodes, as they emerge, are crucial if this investment is to pay off.
- Public procurement of fuel-efficient vehicles: this has been highlighted in the review of the National climate change strategy as a measure to reduce greenhouse gases from transport. It should be commended as a way to encourage the introduction of alternative fuels to the market and to gradually improve the fuel efficiency of the commercial vehicle fleet over time.

5. Roads

- The inter-urban motorway/dual carriageway will be complete by 2010. It is important that it be managed to maximise total mobility, since road building without complementary policies encourages motor vehicle use. An important opportunity is provided for bus transport, and investment in both the management of the system and the infrastructure itself – see demand management above – should be made to facilitate this opportunity and maximise the potential for all forms of public transport on the inter-urbans in order to attempt to arrest the trend of increasing numbers of private cars.

6. Strategic Considerations and Spatial Strategy

- No investment portfolio is more salient to the challenge of achieving the spatial strategy objectives than transport. A key consideration for the new NDP will be to provide economies of scale and scope for the cities of the west and south by providing enhanced mobility between them.

[7] Published in 2003. For Summary see: http://www.transport.ie/upload/general/3230-0.pdf

7. Collateral Fiscal Policies

- It is important that the tax signals motorists and others receive as they purchase and operate their cars facilitate and encourage their move towards more sustainable transport. We will be making a separate submission for Budget 2007 thereon.

Results

Getting the above in place by 2013 will provide real living and mobility choices to most of the Irish public, will help get them into less energy intensive and polluting forms of transport, will reduce the incidence of obesity and the stress and time wasting and will – with other policies – help slow the rapid growth in oil consumption and greenhouse gas and other emissions. It will also provide entrepreneurs in farming, tourism, industry and services and inward investment with the capacity to get products and services quickly and efficiently to market, and allow the cities outside Dublin to link as competitive conurbations in attracting investment and a diversity of labour skills.

2.4 Energy

Challenges

In NDP 2000-2006 sustainable energy was targeted to receive €223 million under the headings energy conservation and renewable/alternative energy. The NDP progress report[8] published in June 2006 does not provide an update on energy projects financed under the NDP to date. We believe that this sector deserves a much higher priority in NDP 2007-13. We welcome the publication on October 1, 2006 of the Green Paper – *Towards a Sustainable Energy Future for Ireland* - that identifies the context and challenges, and the key options facing us.[9] We intend to respond to the invitation to make submissions thereon by December 1, 2006.

The sustainability of the Irish energy sector is challenged by several trends:

- Increasing total and per-capita consumption of energy: Demand for energy is projected to continue to rise at an average rate of almost 3 percent per annum, with the greatest increases in the transport and residential sectors. Demand for electricity is expected under 'business as usual' to grow by 2.5–4.3 percent per annum until 2020.
- High dependence on imported fuels and on fossil fuels for electricity generation with resulting impact on security of supply: By 2010 Ireland will depend on imported energy, mainly fossil fuels, for 93% of its total energy supply.
- Increasing emissions of CO_2 from the burning of fossil fuels: Ireland's CO_2 emissions under business as usual are expected to rise to 37 percent above 1990 levels by 2010 (74 Mt CO_2 equivalent by 2010, or 13.1 Mt CO2 above Ireland's Kyoto target)
- Low use of renewable energy resources: Ireland currently meets only 2.2 percent of its energy needs from renewable sources, although the contribution of renewable electricity is rising rapidly.
- There is a very welcome development of North South collaboration across a range of issues.

[8] Report for the Joint Committee on Finance and Public Service, Progress on the National Development Plan 2000-2006, Department of Finance, June 2006.
[9] See: http://www.dcmnr.gov.ie/NR/rdonlyres/54C78A1E-4E96-4E28-A77A-3226220DF2FC/26716/EnergyGreenPaper1October2006.pdf for details.

The Opportunity

The Green Paper recognises that there are considerable opportunities to move from the 'business as usual' trajectory to a different and more commercially and environmentally sustainable path. These include:

- Improved energy efficiency: to what extent can we reduce investment in expensive new plant by more efficient use of what we've got already, and by investing in highly energy efficient new buildings and plant? It damages the economy and environment to increase energy consumption when it is cheaper and more environmentally benign to increase the efficiency with which we use it.

- Expanded use of renewables: There are now opportunities to sharply increase the share of indigenous renewable energy in the supply mix.

Recommendations

The next NDP (2007-2013) must continue to invest in measures that support these goals such as renewable/alternative energy, energy efficiency, and innovation with the following investment priorities (Legge and Gray 2006):

2.4a. Electricity generation
The electricity transmission infrastructure is currently inadequate to the needs of a rapidly growing economy. It is estimated that an estimated 2,000 MW of new generating capacity will be needed over the next 15 years to meet expected demand. This means that upcoming decisions on the mix of generating plants will determine Ireland's energy mix for the medium term.

- Infrastructural investment: investment in the interconnector and the electricity network infrastructure are required to ensure sufficient transmission capacity in the future, and to allow for diversification of supply.
- Renewable electricity: Renewable electricity is likely to meet the government's target of 13.2 percent of installed capacity by 2010, mainly due to an expected increase in installed wind power to over 1000 MW by 2011. Greater penetration of renewable electricity will be difficult without further investment due to problems with connecting intermittent or small-scale sources. Continued investment is needed in facilitating renewable energy and in technology, economics and environment associated research, development and demonstration projects. There is scope for Ireland to become a leader in wave and ocean energy sources but increased investment in these technologies is needed. The next NDP should continue to match market needs with new programmes to support the latest nascent renewable energy technologies.
- Wind energy: The Government could facilitate high wind penetration by encouraging the deployment of open cycle gas turbine stations, which have a relatively low capital cost and provide the flexibility to balance the energy system when the wind drops.
- Biomass: The Government should support the replacement of peat (and, eventually, other fuels) with biomass for electricity generation. Biomass production would retain the social benefits of local employment that are gained by using peat while also boosting the use of a renewable source of energy with fewer environmental impacts.
- R&D: Government support for research and development in renewable technology and associated environment and economics is necessary because of uncertainty in the energy sector and the fact that all the gains from research may not be captured by those who invest in the research. Wave and tidal energy is seen as a promising area for future development in which Ireland could develop a national competitive advantage. Comhar SDC welcomes the initiative by Minister Noel Dempsey to create an R&D programme in

energy named after Charles Parsons.[10] It is important that this initiative be developed and expanded.

- The Grid: Currently Ireland's electricity grid does not permit the connection of large amounts of electricity from intermittent or dispersed sources (like wind energy and CHP). "Embedded" or "distributed" generation is electricity generated in small-scale units that are connected to regional electricity distribution networks. There is much potential for new technologies such as modular combined cycle gas turbine, open cycle gas turbine, combined heat and power (large-scale, mini and micro) and fuel cells to be included in a national system of distributed generation. The accommodation of such decentralised generation will be essential for the wider penetration of many kinds of renewable electricity, which is often intermittent or small in scale. A grid that supported distributed generation would bring many benefits, including:
    - Improved security of supply through an increased number of generating units, diversified fuel mix, increased reliance on domestic sources of power;
    - Reduced environmental impacts through reduced greenhouse gas emissions;
    - Increased local employment through the construction and operation of plants locally;
    - Increased efficiencies through competition and reduced costs to consumers.
- Combined Heat and Power (CHP): CHP, also known as cogeneration, is the simultaneous production of usable electricity and heat in a single process. CHP units are about 20-25 percent more energy efficient than conventional electricity generating units because they use the heat produced rather than releasing it into the atmosphere. CHP units are often located close to point of use, thus increasing efficiency by reducing transmission losses. The further penetration of CHP will require incentive structures and adaptations to the national grid that allow embedded generation. Biomass-fired CHP has all the above benefits of CHP and in addition also uses an indigenous and renewable source of energy.
- Microgeneration: technologies such as micro-CHP, micro-wind power and domestic solar panels would bring embedded generation closest to the point of use. Microgeneration could be promoted by funding R&D in new microgenerating technologies. New measures will be required to allow grid connection, preferably by a simple and standardised procedure to reduce the barriers to market entry.

2.4b. Energy fuel mix

Ireland is expected to depend on natural gas for 68 percent of its electricity needs in 2020. This has particular implications for security of supply and therefore more diversification of energy fuels is necessary with the following recommendations:

- Coal: If coal is to remain part of the energy mix, the development of CO_2 capture storage and sequestration (CSS) should be supported to mitigate its release of CO_2 emissions. This technology is still far from being cost effective, but much work is on going in the US, Japan and Europe focussed on commercialising CSS. The fast-tracking of this work is driven by the European Union Emissions Trading Scheme (EUETS) which has created an EU-wide market in CO_2; this provides utilities with an immediate payoff (€10-20 per tonne) for reducing emissions, which is especially attractive for the most carbon intensive fuel, namely coal. It is crucial that this market continue post 2012, so that utilities can make long-term carbon-efficient investments.
- LNG: the development of a Liquefied Natural Gas (LNG) terminal would enhance security of supply but at great cost. Nevertheless, investing in an LNG terminal in the UK or even mainland Europe would enhance Irish supply security through greater interconnectedness of the markets. A partnership with the UK in this regard should be considered.
- Biofuels: Ireland has the potential to produce biofuels from agriculture, such as biodiesel from rapeseed oil, as well as from other industrial activities like vegetable oils recovered from the food industry. It is essential that biofuels meet the highest standards of quality and performance – any deficiencies in this regard may damage irretrievably their credibility in the market place. This is especially true in regard to ethanol. The

[10] Announced September 28, 2006. See: http://www.dcmnr.gov.ie/Press+Releases/Minister+Noel+Dempsey+Launches+Charles+Parsons+Energy+Research+Awards.htm for details.

Government should act on the suggestion by the Oireachtas Joint Committee (2006) to investigate the possibility of supporting the conversion of the Mallow sugar factory to bioethanol production;

- Support for new energy supply and services which provide a mixture of competitiveness and environmental services.
- Financial provision for Sustainable Energy Ireland's *House of Tomorrow* and *Greener Homes Scheme* should be sustained and increased over the life of the new Plan;
- Continued and enhanced support for householders through SEI's Greener Homes Scheme should include additional options for micro-generation (small-scale wind/hydro generation and photovoltaic panels) including financial provision for battery sets for micro-generation systems

2.4c. Demand-side measures

Demand-side management can reduce the size of the energy sector relative to the whole economy and will be essential to reducing Ireland's dependence on imported energy, environmental impacts and vulnerability to increased prices. It is an area that – in spite of the substantial net payoffs to investment - has not secured the priority it deserves. It is important that in NDP 2007-13 this asymmetry is corrected and it is given 'parity of esteem.'

- Energy efficiency: Energy efficiency can deliver large environmental and economic benefits at less cost than renewable and other new technologies, but such opportunities are often ignored due to market barriers such as imperfect information, access to capital and hidden costs. Building regulations and information campaigns can deliver large energy savings through energy efficiency initiatives with respect to major refurbishment programmes and new buildings, using existing and proven technology. Awareness and education initiatives can be a very cost-effective way to reduce energy consumption and can bring high returns. Investment in smart metering and ensuring the right prices will assist this cause.
- Transport*:* Investment measures to reduce energy consumption in transport should focus on increasing the provision of public transport and, crucially, a shift away from current development patterns that encourage suburban sprawl towards urban containment, involving high-density residential development, mixed land uses and good public transport. Acting on our recommendations (see 2.3 'Transport') to combine investment in transport with parallel investment in land use infrastructure at the nodes is crucial in this regard. Other measures could include fiscal measures to encourage hybrid vehicles, increase the taxation of heavily polluting vehicles, congestion charges (or similar schemes) and incentives for teleworking.
- Residential and Public Sector: Through its House of Tomorrow and Public Sector Programme, Sustainable Energy Ireland has demonstrated that a 40 per cent improvement above the 2005 Building Regulations is readily[11] achievable. The Energy Performance in Buildings Directive will from 2007 require the energy labelling of all new buildings and those that are sold. It is important that the NDP 07-13 commits to make all new public buildings including public sector financed housing, meet the House of Tomorrow (+40 per cent) standard and that the regulations be changed so that private sector performance matches the public.
- Industry: The energy specific recommendations are included in '2.6 Industry'.
- 'Towards Zero Energy communities' There is a strong case to support – perhaps via the Sustainable Development Fund – communities that work in partnership with public and private stakeholders to provide models of effective delivery of close to zero energy performance, and the use of advanced renewables.
- Supporting measures are necessary to underpin sustainability of the investment in the built environment. Full and timely implementation of the EU's Energy Performance in Buildings Directive will be an important dimension in advancing the energy efficiency of the building stock but should also be accompanied by the early review of Part L of the Building Regulations to enhance further the thermal efficiency of buildings.

[11] More than 4000 units in all counties, covering a range of building types, and undertaken by a range of developers, have been installed. See: http://www.sei.ie/ for details.

Results

If these actions are taken over the 2007-13 period, Ireland will move from being a European laggard as regards both energy efficiency and renewables, to being a leader. Our dependency on imports, with all the attendant risks of price volatility and supply interruption, will be diminished. Our emissions of greenhouse gas emissions will fall substantially below the business as usual baseline, and the bill for the Irish taxpayer to buy out our overshoot of our Kyoto target will be reduced.

2.5 Tourism

Challenges

In 2005, there were 6.7 million overseas visitors to Ireland up from 4.2 million in 1997, representing a 37% increase. Over the same period, total foreign revenue earning increased from €2.1 billion to €4.3 billion (51% increase). In the context of international tourism, sustained rapid growth is forecast to continue. In the short-term, greater access by way of low-cost airlines together with a revival in major European economies would reinforce and strengthen tourism with market potential to attract visitors from the new accession countries. However, in regard to the future, the sector will come under increasing pressure as the perception takes hold that Ireland is an expensive place to visit. Many of the costs in this regard are not under the control of the tourism industry. This means that compensation to visitors in the form of better quality and more variety will be required if Ireland is to hold its market share, and this in turn means focus on the quality of environment, widely defined to include both nature an the built heritage. The key challenge is to develop appropriate policies and funding framework to facilitate development of sustainable and spatially balanced tourism industry (Tourism Research Centre 2006).

Ireland has been promoted as a clean, green tourism destination, famous for its landscape, environment, natural habitats & biodiversity. Investment under the NDP must ensure that this natural resource base, which is fundamental to the tourism sector, is protected and enhanced. Fáilte Ireland visitor surveys highlight the quality of sightseeing and scenery as the primary visitor motivation. There has been substantial investment in water supply and treatment over the life of the current plan, and this and related investments need to be continued, so that the objectives of the Water Framework Directive are met, and the basis for tourism and local use of water assets is enhanced. There is a significant role for the tourism sector itself in protecting the environment on which it is so dependent. Ireland's main asset is its scenery; however this is also a public good, which is not directly under the control of the tourism industry.

Pressures arising from tourism include

- Waste generation
- Energy
- Seasonality / concentration of tourists
- Housing / Urban problemsIllegal dumping
- Activities with potential to harm sensitive areas - threats to ecosystems & biodiversity
- Disruption of coasts
- Deforestation
- Water overuse - water quality / wastewater treatment
- Greenhouse gas emissions - climate change (car dependence / airline importance) exacerbate climate change/greenhouse effect - c.10% over target
- Unsustainable & inequitable resource use

Recommendations

- As regards sustainability concerns, tourism suffers from a lack of policy and is under-researched. It is important to know limits and how best to safeguard our natural assets. Resources must be committed to statistics, research and planning to increase understanding / anticipate trends. Specific instruments will have to be developed to objectively determine the capacity / limits of an area, and how to manage them once identified.
- Investments in new tourism infrastructure and services – including eco-tourism - that provides a combination of competitiveness and environmental services. Environmentally friendly products and services, which meet requirements of consumers, should be supported. Development of attractive promotional packages aimed at boosting revenue in rural areas. A good example is the cross-border "Green Box" area in Leitrim, Fermanagh and parts of Sligo, Monaghan, Cavan and Donegal where fourteen tourist accommodation providers have been awarded the EU Eco-label.Failte Ireland's Environmental Unit should be adequately resourced to ensure that it can deliver on its mandate under planning and environmental codes.Assignment of responsibility and provision of funding to complete a national inventory of outstanding landscapes (an update of the An Foras Forbatha inventory undertaken nearly thirty years ago).Provision of funding for the preparation and implementation of a national Coastal Zone Management strategy – is a key priority to protect the assets of the sector and to meet many other objectives.
- Continue investment in water supply and waste treatment such that the requirements in regard to both the Urban Wastewater Directive and the Water Framework Directive are met within the 2007-13 period.
- Public goods infrastructure must be protected– buildings and streetscapes of character, cultural endowments, parks, and amenities usable by residents and visitors. There has been considerable investment in same over the current plan, and this momentum should be continued.
- Note the 'Transport' recommendations as regards the need to invest positively in more national scale and branded long journey hiking and cycle paths where canals and other existing infrastructure can act as the sinews of such a system.

Results

Appropriately implemented and managed, these investments will guarantee that tourism's natural resource and environmental asset base is protected, and in particular its coastal endowments, which are crucial to the long term viability of the sector. It will provide a platform for a variety of products and services related to high quality natural resources that will allow entrepreneurs in the sector to compete successfully with differentiated activities that can command a premium price in the market place. It will ensure that rural tourism does not become an oxymoron, and help give substance to the national spatial strategy.

2.6 Industry

Challenges

Ireland has moved from an agricultural economy and pastoral, cultural landscape to a post-industrial knowledge economy (Kennelly and Bradley, 2005) and continues to steer its economic base away from high labour-input industries towards higher value-added lower energy-intensive industries such as electronics, ICT, pharmaceuticals and chemicals aimed for export on global markets (Goodbody, 2001). As costs rise, quality will become central to sustaining industrial competitiveness.

Environmental protection, economic growth and industrial competitiveness are mutual complementary goals, as a healthy environment is paramount to maintaining the competitiveness of Ireland's food, agriculture and tourism industries, while also maintaining the viability of knowledge-based service industries (ICSTI, 2004, Browne 2006).

In terms of eco-efficiency, Irish industry has succeeded in achieving absolute decoupling in the case of greenhouse gas emissions and relative decoupling in the case of projected industrial waste as well as maintaining progress towards commercial and packaging waste targets. The next stage is the transition from reactive, ex-post environmental management and compliance with regulation transposed from EU legislation and moves towards innovative, pre-emptive practices.

The next NDP for 2007-2013 should facilitate sustainable industrial development through balanced regional development, north-south collaboration and forward planning in infrastructural provision in order to maintain international competitiveness. Capital infrastructural investment will increase benefits for existing firms through transport cost reduction, improve environment for new business development and induce labour market benefits through reducing commuting times, increasing labour productivity and improving participation by enabling remote working as a result of full broadband roll-out (IBEC, 2006, p6). The investments noted in 'Transport' are key to achieving the economies of scale and scope needed to compete with the Dublin agglomeration. Both public and private transport in the 2007-13 period need to focus on linking the cities outside Dublin. This will automatically facilitate and encourage investment outside the M50 penumbra.

Irish industry and enterprise can become more sustainable by participating in eco-industrial networks, voluntary corporate sustainability reporting (CSR) and initiatives such as Business in the Community Ireland, the 2004 STEM (Sustainable Together through Environmental Management) Project, the Sustainable Energy Ireland (SEI) Large Industry Energy Network and Energy Agreements Programmes, the EPA Cleaner Greener Production Programme (CGPP) and Environmental Technologies Programme and Enterprise Ireland's Ei4 Business Initiative, as well as adhering to the new Irish Energy Management Standard IS 393 and the proposed British standard on sustainability management BS 8900, which links formal standards such as ISO14000 and private standards such as the GRI and AA1000.

As regards waste, there has been progress over the current plan, with additional infrastructure, the use of pricing to encourage re-use and recycling, and a professionalising of the business and of some local authorities.

Moving with ever more intensity to a knowledge-based economy is a crucial pre-requisite to compete in global markets, and to do so in manners that enhance environmental and social responsibility. Comhar SDC supports the programme outlined in Strategy *for Science, Technology and Innovation 2006-2013*, which is designed to make Ireland a knowledge leader in key areas.[12]

Recommendations

Measures recommended for the NDP that are particularly relevant for industry include:

- Investment in transport access and public transport, to both widen the access to labour and to markets. In constructing new plants, every effort should be made to facilitate access to public transport, and car-pooling etc should be encouraged.
- Support for locating employment-generating land uses and associated infrastructure in close proximity to public transport and town/village services;
- Investment in projects contributing to:
    - Water Framework Directive – reducing emissions and intake,
    - Biodiversity Directive - conservation and creation of habitats,
    - Climate Change mitigation and abatement – decarbonisation of industry and energy,
    - REACH Directive (pharma sector),
    - Air pollution reduction – PM and NOx
    - Waste Directive – reduced volume and toxicity of throughput;
- Rewards for participation or certification for ISO14001, energy efficiency agreements or other independently validated quality performance standards;
- Investment in Ecoparks with economies of scale and matching the criteria above;

[12] See http://www.entemp.ie/publications/science/2006/sciencestrategy.pdf for the full strategy.

- Infrastructural development and investment of €1 billion in the waste sector, including privatization of waste management, regional waste management plans, integrated facilities and grant aid for waste management infrastructure for all market players;
- Investment in ideas and people - R & D and training – including projects that enhance performance as regards sustainability.

Results

This programme will ensure that both indigenous entrepreneurs and inward investment will have quality and knowledge in their widest senses as key sources of comparative advantage as they face more competition. Industry will be correctly perceived as an important contributor to quality of life. New knowledge will result in a continuing flow of innovations that enhance productivity and open new frontiers.

2.7 Households

Challenges

Eighty percent of our environmental impact as consumers comes from just four everyday decisions - how we run our homes, what food we eat, how we get around, and holiday travel (Doran 2006). Individually and collectively, sustainable consumption measures need to begin here. Households and communities can play a proactive role in embracing sustainable consumption – given an appropriate voice and support in strategic decision-making. New bodies such as the National Consumer Agency could be given a statutory role in advancing sustainable consumption and sustainable household consumption. The Taoiseach's Task Force on Active Citizenship could also make a considerable contribution to the demand-side debates on responsible consumption.

A complex range of social, economic, demographic and other lifestyle-related factors influence household consumption of energy, food, and mobility, but income and prices are key influencers of consumption. Other sections in this document make recommendations on energy generation and mobility, therefore this piece focuses mainly on the built environment and community issues. The experience of community can influence patterns of consumption in a number of ways. At the most basic level, there is recognition that a protected environment is a significant contributor to our quality of social and individual life. The kind of natural and man-made environments, including the state of local neighbourhoods, impact hugely on the quality of family and community life.

The National Economic and Social Council (2005) has described its vision of sustainable neighbourhoods as compact, centred, diverse and walkable neighbourhoods that have sufficient populations to support the development of high quality services and have a diverse mix of housing suitable for all people at all stages of the family cycle. The Council draws attention to the risk, however, that new core principles in support of sustainable neighbourhoods i.e. sustainable urban densities, consolidated urban areas, compact urban satellites, and rapid communications – "may not be adequately reflected in actual developments." (NESC 2005)

There is currently a trend of additional housing being located as satellites, urban peripheries or bolted on to existing small villages without the necessary services, e.g. waste water treatment plants, schools, community facilities, parks etc. By not providing these packages of services in sufficient quantity, there is inevitable pressure to meet the housing demand by dispersed rural housing. This is a product in part of preference, but largely of necessity, as prospective buyers move to options that they can afford. Isolated single dwellings – and their demands on infrastructure and services - can impact significantly on the national heritage in a number of ways:

- Landscape and seascapes (inc. geology);
- Biodiversity (incl. flora, fauna and wildlife habitats);
- Archaeological Heritage (incl. vernacular heritage);
- Water Quality (particularly groundwater); and

- Built Heritage (incl. architectural heritage, vernacular heritage, inland waterways, heritage parks and gardens).

Planning authorities, in their assessment of planning applications for single houses, should have ready access to accurate and high quality data pertaining to the state and likely impacts on groundwater resources and national heritage if they are to be expected to deliver decisions that guide new rural houses to locations where they will not result in significant negative impacts. The Heritage Council has observed that the principal gaps in heritage data relate to landscape character and to biodiversity value outside of those areas which are designated as being of national (NHA) and European importance (SAC and SPA). Landscape Character Assessments (LCAs) are one of the tools that can facilitate this process.

Other community-based consensus and community engagement mechanisms should be made available to local stakeholders, for example Community Development Boards, including:

- Civic Fora
- 21st Century Town Hall Meetings (Dialogues)
- Citizens Juries
- Deliberative Surveys
- Multi Criteria Analysis Conferences
- Open space meetings

These innovative mechanisms are designed to assist communities address complex issues, and resolve potential conflicts between stakeholders. They could be used more widely to generate debate on innovative responses to pressures for the further development of dispersed housing in rural areas e.g. criteria to be included in local development plans. The NDP should provide incentives for more local authorities to integrate sustainability into their local area plans.

Support for decentralised renewable and low carbon energy production is one of the most far-reaching contributions that NDP investments in infrastructure design can make to the sustainability of local communities in the near term. A decentralised approach could deliver multiple benefits in the context of sustainable development, including dividends in terms of national energy security, environmental benefits, economic activity, innovation, more consumer choice, and community empowerment in every sense. Some proposals to advance this objective are included in '2.4 Energy' above.

An informed citizenry is a key pre-requisite for a fulfilled and active community. There are campaigns ['Race against waste' (Waste), 'Power of One' (Energy)] that provide very useful information, and associated web sites such as Sustainable Energy Ireland (www.sei.ie/) but the work of Clinch *et al* (2006) shows that it is the quality of life in the immediate hinterland that is most salient in shaping well being, and we don't have information that is systematically site specific.

Some conflicts are caused by irreconcilable differences, and no amount of mediation of negotiation skills will find a mutually agreeable solution. However, in most cases, conflict is gratuitous, and could be avoided or diminished in destructive impact if the issues and choices were posed early on, and if key stakeholders engaged with the appropriate framework and skills.

Recommendations

- A strong commitment to coherence with National Spatial Strategy (NSS) and the targeting of investment for physical infrastructure in the "gateways" and "hubs" will help give the other cities and regions outside Dublin comparative advantage as regards scale and scope, and reduce the pressures on Dublin and its hinterland. This is essential to underpin the implementation of the NSS

- Information that is timely, relevant and accurate is a key means of citizen empowerment. This can now be provided on a web-based system; all households are now digitally referenced. The householder should be able to enter their address and access a full suite of timely information on the local social and physical environment. Investment in the provision and up dating of such a system should be a priority.
- Provision of resources to allow for biodiversity proofing the Government's own building programme particularly in the light of new building contracts under the Government's Decentralisation programme;
- Support for community groups that foster environmental and social goals within the community. This could include resources to engage in mediation and negotiation. Ongoing work in UCD indicates that communities are less antagonistic and more amenable to productive discourse where they are involved early on in a mature and full discussion of options.[13] The Sustainable Development Fund could be used as a way of channelling substantial resources on a competitive basis to communities that developed and implemented a local Sustainable Development Plan.
- Support for local authorities who are implementing such plans, and need the skills and information resources to do so.
- The National Anti-Poverty Strategy set targets to address fuel poverty in local authority dwellings, for 2007 and 2010. The new NDP should set aside funding to ensure that fuel poverty targets are met, and ensure continuous review of efforts to eradicate fuel poverty by, *inter alias*, supporting energy efficiency and renewable energy measures.
- Dissemination of information to consumers on consequences of food, energy and mobility choices.
- Investment in whatever priority measures the Taoiseach's Task Force on Active Citizenship develops

Results

This investment package will result in informed and empowered communities, able to negotiate and to engage with others to arrive at a mutually beneficial consensus. The application of the Sustainable Development Fund will provide a number of communities that have successfully implemented a suite of interrelated and mutually re-enforcing projects that promote sustainable development and provide a model for others to follow.

2.8 Marine

Challenges

To many, the Marine sector in Ireland is synonymous with fish and fisheries, often seen as a minor inconsequential player of little economic interest and even less economic potential. In the past decade that we have begun to realise the breadth and scale of the Irish marine resource, its current value and its very real and tangible economic, social, environmental and scientific potential (Whelan 2006).

In addition to our modest land bank of 90,000 km^2 we claim stewardship over an additional 900,000 km^2 or 220 million acres of hidden marine territory. The majority of our population lies within 20km of our 7,500m long coastline and practically all of our exports and imports are carried by sea.

Although under-developed and with a fledgling marine sector by international standards, the ocean economy in Ireland is currently valued at €3 billion and supports 44,000 jobs, both directly and indirectly and contributes just over 1% of Ireland's GNP – a much lower proportion than in most other maritime countries.

Perhaps one of the greatest challenges facing the marine sector is the sustainable management of our marine and aquaculture fisheries resources. Despite considerable

[13] On going PhD research by Louise Gallagher, School of Geography, Planning and Environmental Policy UCD.

investment over the past two decades Ireland's marine fisheries resources are under increasing pressure and urgently require a new management paradigm if they are to continue to provide sustainable employment. For example Ireland had fish landings of €210,000,000 in 2002. This was the second most valuable year on record (2001 landings: €254,000,000). However, these figures mask a long-term decline in volumes. The 245,000 tonnes landed in 2002 was the lowest in a decade, and considerably down from 1998's all-time record high of 320,000 tonnes. Irish coastal waters are amongst the richest fishing grounds in the world in terms of primary productivity. Future changes include the need to adopt an ecosystem-based approach to ensure the sustainable management of fish stocks.

The Marine Institute is currently (2006) finalising a major research and innovation strategy for the period 2007-2013, with the objective of delivering an integrated research and innovation program that will, through the use of research, knowledge and technology transform the sector to deliver sustainable, high growth, high value added, market led opportunities. Comhar looks forward to the publication and implementation of this strategy - *Sea Change: A Marine Knowledge, Research and Innovation Strategy for Ireland (2007-2013)* and a commitment to bring forward measures to:

1. Strengthen the competitiveness of traditional marine industries and their progression to higher value added activities.
2. Push the frontiers of knowledge and explore the interfaces between disciplines.
3. Deliver integrated scientific advice, policy and regulation to support environmental, social and economic advancement.

Recommendations

Comhar SDC would like to see the new NDP commit to deliver an integrated research and innovation program that will, through the use of research, knowledge and technology transform the marine sector to deliver sustainable, high growth, high value added, market led opportunities. The new NDP should provide adequate resources to meet the costed recommendations in the recently published Strategy for Science, Technology and Innovation (2007-2013). Recommendations from this and other sources include:

- The development of research discovery programs in Marine Biotechnology; Marine Biodiscovery; Marine Technologies.
- Recommendations to establish Ireland as an internationally recognized centre for Ocean Renewable Research (ocean energy).
- Establishment of a Smart-Bay system for the observation, monitoring and management of coastal and ocean environments and the testing of new advanced technologies.
- Development of Ireland as a global monitoring centre for climate change assessment in the context of the North Atlantic Gulf Stream unique marine and other ecosystems and the Smart-Bay system.
- Use of the data derived from the Irish Seabed Survey and the new INFOMAR program to place Ireland in a position of competitive advantage in a range of areas including participation in international research programs.
- Stimulate greater involvement by Irish seafood industry in marine-related research, prioritise the development of marine health foods (functional foods), target a significant increase in FP7 participation and seek EU support for a climate change monitoring centre.
- Creation of Ireland as a favoured site for landing fish from all sources
- Conservation of key ocean related assets under our (partial) control. A key iconic and symbolic target in this regard is the Atlantic salmon.
- Development and implementation of a Coastal Zone Management Strategy to *inter alia* protect spawning grounds for fish stock, and wetlands and other habitats. [This is a crucial investment also for the tourism sector, whose potential will be diminished if this zone is not optimally managed.]

Results

This will result at the end of the NDP with Ireland as a favoured destination for landings, as a science based manager of coastal resources, broadly defined, with salmon having a secure future, and with a coastal zone management system in place that protects key spawning grounds, habitats and ocean focused recreation activities so that outputs are sustainable into the far future.

2.9 Cross-cutting themes

In following this template, we have not given specific separate attention to our cities, or to the environmental themes that feed into and are a part of the sectoral analyses and recommendations.

Cities

These are the hubs we look to make a statement to the world that Ireland is an exciting and fulfilling place in which to live, to do business and invest, to visit and to enjoy. Successful cities are safe, vibrant, clean, with a high quality and well-interpreted natural and built environment, full of creativity, exemplifying excellence in design, entrepreneurship and diversity, absorbing new people and new influences, with centres of learning of international repute. The Dublin city region is on the global stage, ranked 18 in the top 61 cities of Europe in terms of GDP per capita.[14] The other cities are not, and it is an important task of NDP 2007-13 to create high-speed links such that they can together begin to achieve the agglomeration economies that will make them a global force together. The measures described above will together support this objective, but urban and national leadership is needed also to give local character, style and shape so that the outcomes are urbane in the best sense.

Environmental Endowments

Our water, air quality, biodiversity, our waste challenges and climate change obligations all press and some are made more complex to achieve because of our prosperity. And all are guided by EU Directives that demand compliance over the life of the NDP. Because fulfilling these obligations is so embedded in what we do sectorally, we have flagged these as issues and opportunities throughout. It is best is they are achieved organically as a part of doing business – this achieves targets at least cost compared to 'retro-fit', it gives a sense of ownership and commitment to the sectoral agents and it is more dignified and better for our image to be seen to be ahead of the game, rather than being expensively dragged through expensive and time consuming administrative and legal procedures. But it is important to ensure that the sum of the parts does comprise a whole.

[14] Frankfurt am Main is number one (74,455), Copenhagen 8th (50,775) and London is 21st (35,072) from *State of English Cities Volume 1*, Department of Deputy Prime Minister, London, March 2006.

References

Browne, D. (2006), 'Economic, social & environmental performance of industry & how to influence it', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Bullock, C. and D. Styles (2006). 'Sustainability of the Irish Agricultural Sector', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Byrne, K., and T. Legge (2006). 'Economic, environmental & social performance of the Irish forestry sector', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Clinch, P., S. Ferreira, F. Brereton, M. Moro, and C. Bullock (2006). 'Understanding & measuring the quality of life in Ireland', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Doran, P. (2006). 'Economic, Social and Environmental Performance of Irish households and communities, and how to influence it', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Douthwaite, R., D. Healy, and K. Leyden (2006). 'Economic, environmental & social performance of the Irish transport sector'. Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Goodbody (2001). *Review of the National Anti-Poverty Strategy*, Department of the Taoiseach.

IBEC (Irish Business and Employers Confederation) (2006). *National Development Plan 2007-2013: A New Approach to Balanced Regional Development*, IBEC Submission to Department of Finance.

ICSTI (Irish Council for Science, Technology and Innovation) (2004). *Sustainable Development in Ireland: The Role of Science and Technology*, Forfas.

Kennelly, J.J., Bradley, F. (2005). Ireland in the New Century: An Opportunity to Foster an Ethic of Sustainable Enterprise. In: *Sustainable Development*, Volume 13.

Legge, T., and M. Gray (2006). 'Economic, environmental & social performance of the Irish energy sector', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

NESC (National Economic and Social Council) (2005). *NESC Strategy 2006: People, Productivity and Purpose*, December 2005.

Tourism Research Centre (2006). 'Economic, environmental & social performance of the Irish tourism sector', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Walsh, B. (2006). 'Shaping the Macroeconomy and Quality of Life', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.

Whelan, K. (2006) 'Towards Sustainability – The Marine Sector', Comhar Briefing Paper. Presented at *Sustainability in the National Development Plan 2007-2013*, October 4-6 2006, Davenport Hotel, Dublin.