



# **Sustainability Reporting in the Northern Territory**

## **Submission to the Northern Territory Environment Protection Authority**

**2 September 2011**

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### 1. Introduction

- 1.1 The Environmental Defenders Office (NT) Inc (EDO NT) is dedicated to protecting the environment in the public interest. EDO NT provides legal advice, takes an active role in environmental law reform, and offers education designed to facilitate public participation in environmental decision-making.
- 1.2 EDO NT welcomes the opportunity to make a submission to the EPA regarding the model for sustainability reporting in the Northern Territory. EDO NT wishes to acknowledge the significant input by the Environmental Defenders Office NSW (Ltd) (EDO NSW) to this submission. EDO NT and EDO NSW are both experienced in advising and making law reform submissions on the ways that the principles of ecologically sustainable development should be implemented in legal and policy frameworks and government decision-making. EDO NSW has a science division which has particular expertise to submit on models for sustainability reporting.
- 1.3 EDO NT and EDO NSW wish to acknowledge the reports prepared by Charles Darwin University regarding sustainability reporting which were important resources for EDO NT’s submission to the EPA.
- 1.4 EDO NT and EDO NSW support the development and implementation of sustainability reporting in the Northern Territory and encourage the EPA to take this opportunity for the NT to become a leader and model example for sustainability reporting in Australia.

## 2. EPA's functions

2.1 The EDO makes this submission in the context of additional functions granted to the EPA under the *Environment Protection Authority Act* to:

- 5A (c) Monitor and assess the cumulative impacts of development in the Territory; and
- (d) Publicly release reports on environmental quality

5A(3) To avoid doubt, the monitoring and assessment of the cumulative impacts of development do not extend to:

- The monitoring of discharges of pollution from a particular place; or
- The monitoring of compliance with legislation relating to pollution from a particular place.

2.2 The EPA is aiming to:

- (a) Develop a reporting regime that fosters the principles of ecologically sustainable development particularly inter and intra generational equity, integrated decision-making, the use of the precautionary principle, conservation of biological diversity and ecological integrity, improved valuation, pricing and incentive mechanisms and public participation.
- (b) Satisfy its legislative reporting requirements of the impacts of development on the environment, to assist the Territory to meet its obligations under the intergovernmental agreement and to become the first Australian jurisdiction to adopt sustainability reporting as distinguished from state of the environment reporting.

## 3. Summary of EDO's recommendations

3.1 The model for sustainability reporting should be effective in influencing policy change to achieve ecologically sustainable development. A comprehensive sustainability reporting model includes indicators across environment, social and economic impacts and outcomes.<sup>1</sup> This is what distinguishes sustainability reporting from State of the Environment reporting. The EPA's resources to develop and implement sustainability reporting must be considered in order that the EPA can fulfill its functions. EDO recommends that EPA focuses on developing a smaller model drawing from indicators

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<sup>1</sup> Austin, Beau and Garrett, Stephen, "State of the Environment Reporting: A Review of Theory and Practice – Final Report' (14 July 2009) Charles Darwin University, 28.

used at a national level and once this model has been developed look to broaden the indicators by reference to internationally accepted indicators.

- 3.2 The model of driving force-pressure-state-impact-response (DPSIR) should be adopted by the EPA to report on sustainability with 'cap' added to the model. The DPSIR model is an extension of the PSR (Pressure-State-Response). The PSR model was developed by the OECD is used at an international, national and state level for environment reporting.<sup>2</sup>
- 3.3 There are established sustainability indicators which the EPA should use to develop its model. All Australian jurisdictions base their SoE reports on 75 environmental core indicators which have been agreed upon in 1999 by State, Territory and Commonwealth Ministers.<sup>3</sup> These indicators cover six reporting themes, namely atmosphere, biodiversity, the land, inland waters, estuaries and the sea, and human settlements.<sup>4</sup>
- 3.4 The sustainability reporting will then be comparable with sustainability reporting in other jurisdictions and adaptable to other jurisdictions. EDO recommends developing the broader sustainability reporting on the basis of indicators set by The United Nations Department of Economic and Social Affairs in 2007.<sup>5</sup> Where UN CSD indicators are not relevant or appropriate, the EDO recommends adopting indicators developed for Millennium Development Goals (2005) and, to incorporate a local focus, the requirements of the *International Agreement on the Environment*, the *National Strategy for Ecologically Sustainable Development* and NT specific policy goals.
- 3.5 The EDO recommends initially developing a small model for sustainability reporting that has a specific focus on the environment (or even specific sectors of the environment, for example air or water), and in time increasing the scope to include indicators from social and economic sectors. The EDO supports aligning indicators with the two main NT Government policies, *Territory 2030* and the *Climate Change*

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<sup>2</sup> Victorian Commissioner for Environment Sustainability, Framework for State of Environment Reporting, (August, 2005), 1.4 Reporting Model accessed on 2 September 2011 at: [http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/\\$File/Framework+for+State+of+Environment+Reporting.pdf](http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/$File/Framework+for+State+of+Environment+Reporting.pdf).

<sup>3</sup> Victorian Commissioner for Environment Sustainability, Framework for State of Environment Reporting, (August, 2005), 1.5 Environmental Indicators and Data, accessed on 2 September 2011 at: [http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/\\$File/Framework+for+State+of+Environment+Reporting.pdf](http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/$File/Framework+for+State+of+Environment+Reporting.pdf).

<sup>4</sup> ANZECC State of the Environment Task Force, Core Environmental Indicators for Reporting on the State of the Environment (March, 2000) Foreword, 1 accessed on 2 September 2011 at <http://www.environment.gov.au/soe/publications/indicators/pubs/core-indicators.pdf>.

<sup>5</sup> United Nations (2007). Indicators of Sustainable Development: Guidelines and Methodologies. Third Edition.

*Policy* 2009. However, in order for the sustainability indicators to identify gaps in policy, there needs to be a broader framework of identified indicators.

- 3.6 The sustainability reporting must be based on reporting the cumulative impacts of development on segments of the environment or themes, similar to the approach for SoE reporting. Case studies, such as the cumulative development impacts on Darwin Harbour, could be included in the report.
- 3.7 The requirements for sustainability reporting to be effective in shaping policy are<sup>6</sup>:
- (a) Sustainability indicators need to be institutionalized;
  - (b) Sustainability indicators need to be taken seriously at high levels of government; and
  - (c) Results need to be fed rapidly to *responsive* policy makers.
- 3.8 The EPA has the ability to recommend caps through the reporting or its general function to recommend targets or caps under the *EPA Act*.<sup>7</sup> Caps should be added to the DPSIR model to achieve:
- (a) Sustainable development through scientifically determined caps on pollutants
  - (b) A reporting process that avoids duplication with the State of the Environment (SOE) Reporting.
- 3.9 EPA should precisely defines the goal, purpose, outputs and activities of sustainability reporting. EDO recommends the following:
- (a) Goal: To achieve ecologically sustainable development
  - (b) Purpose: To improve environmental policy and increase political will for sustainable development.
  - (c) Outputs: Report against each sustainability indicator with reference to the cap and recommendations for action if the cap is not met.
  - (d) Activities: Actions to meet the caps (for example, changed development regulations and increased enforcement of pollution control).
- 3.10 The overall goal of sustainability reporting should be to achieve ecologically sustainable development in the Northern Territory. This goal is fundamental to the EPA fulfilling its function to 'advise the Minister, businesses and the community about ecologically sustainable development in the Territory' pursuant to section 5 of the *Environment Protection Authority Act* (EPA Act).

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<sup>6</sup> Garnett & Huchery (2010).

<sup>7</sup> See *Environment Protection Authority Act*, sections 7(2)(b)(i) and (ii).

3.11 EDO recommends setting caps to:

- (a) Achieve the goal of ecologically sustainable development in the Northern Territory. The setting and development of caps to achieve sustainable development are fundamental to drive policy development to meet this goal. The inclusion of caps in the model will distinguish the reporting by the EPA from State of the Environment reporting.
- (b) Assess the cumulative impacts of development on the environment with the aim of containing development to sustainable levels taking into account the impacts on the environment.
- (c) Implement the principles of ecologically sustainable development in the model for sustainability reporting, particularly the principles of intra and inter-generational equity, the precautionary principle, conservation of biological diversity and ecological integrity, polluter pays and public-participation.

#### **4. The importance of sustainability reporting**

##### *Historical and political support for sustainable practices*

- 4.1 Significant global legislative efforts started around 1950 to protect biodiversity, which then expanded in the 1960s to include waste, chemicals and pollution issues, then cultural protection; in the 1970s to include sustaining ecosystems, and finally in the 1990s started to include governance, including trans boundary cooperation and public participation.<sup>8</sup>
- 4.2 Most multilateral environmental agreements try to protect species, or manage human impact on those species, and have traditionally focused on fisheries and marine animals.<sup>9</sup> Traditional sustainability assessments aim to: “provide decision makers with an evaluation of ... integrated nature-society systems in short- and long-term perspectives in order to assist them to determine which actions should or should not be taken in an attempt to make society sustainable”<sup>10</sup>.
- 4.3 Over time, agreements have progressed from focusing on basic/single issues such as pollution prevention and conservation of particular species, to more complex

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<sup>8</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

<sup>9</sup> Ibid.

<sup>10</sup> Kates et al. (2001) in: Singh, R. K., H. R. Murty, et al. (2009). "An overview of sustainability assessment methodologies." Ecological Indicators **9**(2): 189-212.

approaches such as conservation of entire ecosystems, catchments and air sheds<sup>11</sup>. However current approaches often lead into problem shifting and problem displacement<sup>12</sup>.

- 4.4 Sustainable development is now a priority area in many regions<sup>13</sup>, but real progress of our societies to become more sustainable is very slow, and it is questionable whether we have made any real progress towards more sustainable societies; in many instances, environmental impacts have increased<sup>14</sup>.
- 4.5 Different jurisdictions are implementing sustainability reporting in their areas with their own nuances. The three examples below demonstrate three elements of EDO's recommendations:
- (a) The EU has determined its Sustainability Development Indicators, and placed them *first* in the hierarchy of sustainable development framework, with the SD strategy feeding directly into policy development which facilitates implementation and analysis<sup>15</sup>. EDO recommends EPA adopt this method in order to let scientifically-derived sustainability goals drive policy development.
  - (b) Wales developed a model that recognized that a strong position on sustainable development needs to maintain a given stock of environmental capital for future generations. It also recognized that at times this may counter targets aiming to increase GDP. This was overcome with the recognition that quality of life is not exclusively linked to growth of GDP<sup>16</sup>. EDO recommends EPA adopts the principle of maintaining a given stock of environmental capital – the cap.

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<sup>11</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

<sup>12</sup> Baumgartner, R. J. and J. Korhonen (2010). "Strategic thinking for sustainable development." *Ibid.* **18**(2): 71-75.

<sup>13</sup> Tso, G., K. Yau, et al. (2011). "Sustainable Development Index in Hong Kong: Approach, Method and Findings." Social Indicators Research **101**(1): 93-108.

<sup>14</sup> Baumgartner, R. J. (2011). "Critical perspectives of sustainable development research and practice." Journal of Cleaner Production **19**(8): 783-786.

<sup>15</sup> Ledoux, L., R. Mertens, et al. (2005). "EU sustainable development indicators: An overview." Natural Resources Forum **29**(4): 392-403.

<sup>16</sup> Munday, M. and A. Roberts (2006). "Developing Approaches to Measuring and Monitoring Sustainable Development in Wales: A Review." Regional Studies **40**(5): 535-554.

(c) Mexico has developed a Sustainable Capacity Index which identified five sustainability 'capacities':<sup>17</sup>

- Above the sustainable capacity higher threshold;
- Close to the sustainable capacity higher threshold;
- Optimum situation;
- Close to the sustainability threshold; and,
- Below the sustainability capacity lower threshold.

However this model did not link policy development with meeting the 'optimum situation'. EDO submits that EPA should adopt a model that allows for sustainability modeling to feed into policy development.

#### *What is sustainability reporting?*

- 4.6 Sustainability reporting is a broad reporting method that focuses on assessing the performance of a particular activity with regards to its sustainability. This assessment relies on indices of sustainability. Sustainability reporting has been developed to inform policy-makers about the short and long-term sustainability of human activities.
- 4.7 Sustainability reporting recognizes that environmental change and human-environment interaction are interrelated. The indices are incorporated from a diverse range of themes, however, not just a narrow focus on these interactions. For example, care for the environment requires a strong economy and a functioning, responsible society with a long-term vision<sup>18</sup>. Sustainability embraces social, economic and environmental dimensions, as well as temporal and spatial dimensions<sup>19</sup>.
- 4.8 The reporting process records trends towards sustainable development, and allows continual improvement through frequent, reliable feedback on progress to policy makers<sup>20</sup>.
- 4.9 It relies on indicators that represent the sustainability priorities of a particular society at a particular time. It is important to remember that the indicators or indices measure

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<sup>17</sup> Seingier, G., I. Espejel, et al. (2011). "Mexico's coasts: Half-way to sustainability." *Ocean & Coastal Management* **54**(2): 123-128.

<sup>18</sup> Garnett & Huchery (2010)

<sup>19</sup> Bell, S. and S. Morse (2005). "Delivering sustainability therapy in sustainable development projects." *Journal of Environmental Management* **75**(1): 37-51.

<sup>20</sup> Garnett & Huchery (2010)

*surrogates* for sustainability (or trends towards sustainable development), and are not measuring sustainability as an absolute.<sup>21</sup>

- 4.10 With carefully selected indicators, sustainability reporting can be used to help benchmark a society against global standards of sustainability.<sup>22</sup>
- 4.11 The requirements for sustainability reporting to be effective in shaping policy are<sup>23</sup>:
- (a) Sustainability indicators need to be institutionalized;
  - (b) They need to be taken seriously at high levels of government; and
  - (c) Results need to be fed rapidly to *responsive* policy makers.

*What factors can prevent sustainability policies from being implemented?*

- 4.12 In developing a model for sustainability reporting, it is important for the EPA to be aware of the factors that can prevent sustainability policies from being implemented. The EDO has undertaken a literature review to put together a list of these factors and has taken into account these factors in making its recommendations. The factors that that can prevent sustainability policies from being implemented are:
- 4.13 Political will
- (a) Globally, sustainable development policy declined post 1996, with an increasing focus on terrorism, and an increase in globalization of the economy. In addition, there is an excessive proliferation of treaties and a fragmentation of international bodies, which make it difficult to implement environmental agenda.<sup>24</sup>
  - (b) The development of sustainability indicators is a process of both scientific knowledge, and of political 'norm creation', and both components need to be properly acknowledged. Generally the political dimension is not fully and explicitly recognised.<sup>25</sup>

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<sup>21</sup> Garnett & Huchery (2010)

<sup>22</sup> Garnett & Huchery (2010)

<sup>23</sup> Garnett & Huchery (2010)

<sup>24</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

<sup>25</sup> Rametsteiner, E., H. Pülzl, et al. (2011). "Sustainability indicator development--Science or political negotiation?" Ecological Indicators **11**(1): 61-70.

- (c) Governments nowadays privilege 'soft law' instead of 'hard law' as a way to maximize flexibility and minimize binding.<sup>26</sup> Policy documents define sustainability objectives in the broadest possible terms.<sup>27</sup>
  - (d) It is difficult to set up a new stage of policy, and transform the meritorious ideas and goals of sustainability into reality.<sup>28</sup>
  - (e) Management of a complex dynamic system includes many risks<sup>29</sup>.
- 4.14 Lack of understanding of sustainability and sustainability monitoring
- (a) Sustainable development is a global and long-term challenge.
  - (b) The development of indicators has started while there are still arguments over what constitutes sustainable development<sup>30</sup>
  - (c) People and society constantly change and what comprises sustainability inevitably reflects and evolves with this change<sup>31</sup>
- 4.15 Complexity of models
- (a) When putting sustainable development into practice it is sometimes difficult to figure out the areas of major concern<sup>32</sup>, and there is a lack of data in some fields, and several priority areas may have no information or partial information.<sup>33</sup>

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<sup>26</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

<sup>27</sup> Munday, M. and A. Roberts (2006). "Developing Approaches to Measuring and Monitoring Sustainable Development in Wales: A Review." Regional Studies **40**(5): 535-554.

<sup>28</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

<sup>29</sup> Baumgartner, R. J. and J. Korhonen (2010). "Strategic thinking for sustainable development." *Ibid.* **18**(2): 71-75.

<sup>30</sup> Singh, R. K., H. R. Murty, et al. (2009). "An overview of sustainability assessment methodologies." Ecological Indicators **9**(2): 189-212.

<sup>31</sup> Bell, S. and S. Morse (2005). "Delivering sustainability therapy in sustainable development projects." Journal of Environmental Management **75**(1): 37-51.

<sup>32</sup> Tso, G., K. Yau, et al. (2011). "Sustainable Development Index in Hong Kong: Approach, Method and Findings." Social Indicators Research **101**(1): 93-108.

<sup>33</sup> Ledoux, L., R. Mertens, et al. (2005). "EU sustainable development indicators: An overview." Natural Resources Forum **29**(4): 392-403.

- (b) It is sometimes unclear how developed indicators may be linked to the overarching strategic objectives set by the government, and the trade-off between indicators.<sup>34</sup>
- (c) Different jurisdictions have decided to measure different themes of sustainability which indicates a large range of sustainability priority areas.
- (d) The lack of use of sustainability development indicators is a common complaint.<sup>35</sup>
- (e) It is a major challenge to determine which of the numerous measures of ecological systems characterize the entire system yet are simple enough to be effectively and efficiently monitored and modeled.<sup>36</sup>

#### 4.16 Difficulty and expense of gathering data

- (a) Measuring and monitoring sustainability at the regional level could be expensive or overly difficult, with costs most likely associated with the collection and validation of timely primary data.<sup>37</sup>
- (b) A number of approaches to sustainability reporting are being developed, but with little research undertaken on the underlying usefulness of different approaches<sup>38</sup>, and indeed of the underlying usefulness of the *data*.
- (c) Ecological vulnerability and low adjustment costs make political support more responsive, whereas countries that are not affected ecologically nor have high adjustment costs tend to be more recalcitrant<sup>39</sup>.

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<sup>34</sup> Munday, M. and A. Roberts (2006). "Developing Approaches to Measuring and Monitoring Sustainable Development in Wales: A Review." Regional Studies **40**(5): 535-554.

<sup>35</sup> Bell, S. and S. Morse (2004). "Experiences with sustainability indicators and stakeholder participation: a case study relating to a 'Blue Plan' project in Malta." Sustainable Development **12**(1): 1-14.

<sup>36</sup> Dale and Beyeler (2001) in: Niemeijer, D. and R. S. de Groot (2008). "A conceptual framework for selecting environmental indicator sets." Ecological Indicators **8**(1): 14-25.

<sup>37</sup> Munday, M. and A. Roberts (2006). "Developing Approaches to Measuring and Monitoring Sustainable Development in Wales: A Review." Regional Studies **40**(5): 535-554.

<sup>38</sup> Ibid.

<sup>39</sup> Quental, N., J. M. Lourenço, et al. (2011). "Sustainable development policy: goals, targets and political cycles." Sustainable Development **19**(1): 15-29.

*What are sustainable development indicators (SDIs)?*

- 4.17 An indicator is something that can be used as a proxy for matters of larger significance, or identifies a trend<sup>40</sup>. The main feature of indicators is their ability to summarise, focus and condense the enormous complexity of our dynamic environment to a manageable amount of meaningful information<sup>41</sup>.
- 4.18 Environmental indicators typically include physical, biological and chemical indicators<sup>42</sup>. An indicator should be a useful surrogate for the state of an element of the environment's critical function:
- (a) Trends,
  - (b) Threats
  - (c) Actions
- 4.19 Indicators are often arranged into a 'theme'<sup>43</sup>, for example air, water and land and issues<sup>44</sup>, or biodiversity loss, toxicity, climate change. Each jurisdiction develops its own themes or issues. This can compromise comparability from area to area.
- 4.20 To increase comparability across jurisdictions it makes sense to select universally accepted sustainability indicators for themes and issues. Development places similar impacts on the environment across the board. The distinguishing factors for each jurisdiction are the state of the environment and whether caps for themes or targets for issues to achieve ecologically sustainable development have been set by the jurisdiction.

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<sup>40</sup> Niemeijer, D. and R. S. de Groot (2008). "A conceptual framework for selecting environmental indicator sets." *Ecological Indicators* **8**(1): 14-25.

<sup>41</sup> Singh, R. K., H. R. Murty, et al. (2009). "An overview of sustainability assessment methodologies." *Ibid.* **9**(2): 189-212.

<sup>42</sup> Niemeijer, D. and R. S. de Groot (2008). "A conceptual framework for selecting environmental indicator sets." *Ibid.* **8**(1): 14-25.

<sup>43</sup> See the two Charles Darwin University reports for examples of different themed sustainability models: Austin, Beau and Garnett, Stephen, "State of the Environment Reporting: A Review of Theory and Practice – Final Report" (14 July 2009), Charles Darwin University; Garnett, Stephen and Huchery, Cindy, "Reporting Sustainability in the Northern Territory" (31 May 2010), Charles Darwin University.

<sup>44</sup> Austin, Beau and Garnett, Stephen, "State of the Environment Reporting: A Review of Theory and Practice – Final Report" (14 July 2009), Charles Darwin University, 6.

### *How are indicators generally selected?*

4.21 An indicator should do the following<sup>45</sup> (this is similar to the SMART concept for indicators referred to by the Australian Government for environmental indicators for reporting)<sup>46</sup>:

- (a) capture the essence of the problem and have a clear and accepted normative interpretation
- (b) be robust and statistically validated
- (c) be responsive to policy interventions but not subject to manipulation
- (d) be measureable in a sufficiently comparable way (across states/federal), and be comparable as far as practicable with international standards
- (e) be timely and susceptible to revision
- (f) be measured in a way that the cost of measurement does not exceed its benefits

4.22 For those indicators with insufficient data, it is possible to establish a 'best-available indicator', which can be compiled on the basis of existing data, and a 'best-needed' indicator for which<sup>47</sup>:

- (a) Concepts, definitions or data do not exist
- (b) Data exist but of a quality that is not sufficient to allow publication; or
- (c) Data exist but the quality is unknown

Some of the best-available indicators may not be the ideal indicators for SD policy issues but serve as proxies for the best-needed indicators. Proxies can be considered an intermediate answer in the short-term in order not to leave key problems without answer<sup>48</sup>. EDO recommends the use of proxies where they are more appropriate.

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<sup>45</sup> Ledoux, L., R. Mertens, et al. (2005). "EU sustainable development indicators: An overview." *Natural Resources Forum* **29**(4): 392-403.

<sup>46</sup> Australian Government, Environmental Indicators for Reporting', SEWPaC, <http://www.environment.gov.au/soe/2006/publications/emerging/indicators/index.html#characteristics> accessed 11 August 2011.

<sup>47</sup> Ledoux, L., R. Mertens, et al. (2005). "EU sustainable development indicators: An overview." *Natural Resources Forum* **29**(4): 392-403.

<sup>48</sup> Ibid.

### *How can NT improve on existing sustainability indicator selection?*

- 4.23 Given the vast amount of literature available on the selection of sustainability indicators<sup>49</sup>, EDO does not recommend EPA NT invest large amounts of time or money into the development of a new scheme. EDO recommends that the EPA increases the ability of NT Sustainable Development to be compared with the reporting of other jurisdictions by adopting indicators from available sources.
- 4.24 Comparability
- (a) Diversity in environmental indicators means that it is difficult to compare organisations or sectors or countries (in direct contrast to financial indicators)<sup>50</sup>. EDO recommends avoiding using isolated environmental performance indicators, where evaluation, measurement and reporting are the main objectives. This is because SoE reporting already reports against this model, and sustainability reporting is better utilized as a way to improve the condition of the environment over time, and compare the state of the environment with different jurisdictions. Neither of these aims are currently possible under existing SoE reporting, because each jurisdiction chooses indicators that cannot be compared. EDO recommends EPA NT select a well-developed indicator framework.
- 4.25 There are established sustainability indicators which the EPA should use to develop its model. All Australian jurisdictions base their SoE reports on 75 environmental core indicators which have been agreed upon in 1999 by State, Territory and Commonwealth Ministers.<sup>51</sup> These indicators cover six reporting themes, namely atmosphere, biodiversity, the land, inland waters, estuaries and the sea, and human settlements.<sup>52</sup> EDO considers it appropriate to adopt indicators developed for EPBC or Federal SOE reporting requirements.
- 4.26 The sustainability reporting will then be comparable with sustainability reporting in other jurisdictions and adaptable to other jurisdictions. EDO recommends developing

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<sup>49</sup> For example, refer to the two CDU reports

<sup>50</sup> Ramos, T. B., I. Alves, et al. (2007). "Environmental performance policy indicators for the public sector: The case of the defence sector." *Journal of Environmental Management* **82**(4): 410-432.

<sup>51</sup> Victorian Commissioner for Environment Sustainability, Framework for State of Environment Reporting, (August, 2005), 1.5 Environmental Indicators and Data, accessed on 2 September 2011 at: [http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/\\$File/Framework+for+State+of+Environment+Reporting.pdf](http://www.ces.vic.gov.au/CA256F310024B628/0/F85848DB8E218BE2CA257204000BFA7C/$File/Framework+for+State+of+Environment+Reporting.pdf).

<sup>52</sup> ANZECC State of the Environment Task Force, Core Environmental Indicators for Reporting on the State of the Environment (March, 2000) Foreword, 1 accessed on 2 September 2011 at <http://www.environment.gov.au/soe/publications/indicators/pubs/core-indicators.pdf>.

the broader sustainability reporting on the basis of indicators set by The United Nations Department of Economic and Social Affairs in 2007.<sup>53</sup>

4.27 In order to generate a list of indicators that can be compared with other jurisdictions, EDO recommends adopting appropriate indicators from the following sources:

- (a) The United Nations Department of Economic and Social Affairs has published guidelines and methodologies for developing indicators of sustainable development<sup>54</sup> This is an excellent resource that outlines the themes, sub-themes, core indicators and other indicators that have been developed by a collaborative and iterative process since 1996.
- (b) These UN Commission on Sustainable Development (CSD) indicators were developed for use by countries to track progress toward nationally-defined goals, in particular, and sustainable development, in general<sup>55</sup>
- (c) Where appropriate, EPA NT adopt the indicators presented in the report "*Indicators of Sustainable Development: Guidelines and Methodologies*"<sup>56</sup>

4.28 Where UN CSD indicators are not relevant or appropriate, EDO also considers it appropriate to adopt indicators developed for:

- (a) Millennium Development Goals (2005)
- (b) Requirements of the *International Agreement on the Environment*, and the *National Strategy for Ecologically Sustainable Development* and NT specific policy goals to incorporate a local focus.

## 5. NT model for sustainability reporting

### *EPA's obligations*

5.1 EPA has been granted additional functions under the *Environment Protection Authority Act* to monitor and assess the cumulative impacts of development in the Territory (section 5A (1)(c)); and publicly release reports on environmental quality (section 5A(1)(d)). These functions do not extend to the monitoring of discharges from a particular place (section 5A (3)(a)) or the monitoring of compliance with legislation relating to pollution from a particular place (section 5A (3)(b)).

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<sup>53</sup> United Nations (2007). *Indicators of Sustainable Development: Guidelines and Methodologies*. Third Edition.

<sup>54</sup> UN (2007). *Indicators of Sustainable Development: Guidelines and Methodologies*. Third edition.

<sup>55</sup> UN (2007). *Indicators of Sustainable Development: Guidelines and Methodologies*. Third edition. p 21.

<sup>56</sup> UN (2007). *Indicators of Sustainable Development: Guidelines and Methodologies*. Third edition.

- 5.2 The provision of EPA's function and exercise of powers under the EPA Act should guide sustainability reporting in the following ways:
- (a) Based on the EPA's function, the audience for the sustainability reporting includes the community (refer to section 5).
  - (b) The sustainability reporting should involve consultation with Agencies, businesses and the community, including Aboriginal communities and NGOs.
  - (c) The principles of ESD must inform the sustainability reporting (refer to section 2).
  - (d) The sustainability reporting should be done in accordance with scientifically sound data and in accordance with best practice (refer to section 2(b)(i) and (ii)).
  - (e) Report on the global dimension of environmental impacts of actions and policies and regional variations in the environment (section 2(e)(i) and (ii)).
  - (f) The reporting should facilitate community involvement and consider impacts on the community.

*The National Strategy for Ecologically Sustainable Development and the Intergovernmental Agreement on the Environment*<sup>57</sup>

- 5.3 The National Strategy for ESD defines ESD as:
- (a) "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased."<sup>58</sup>
  - (b) There are two main features which distinguish an ecologically sustainable approach to development:
    - i) we need to consider, in an integrated way, the wider economic, social and environmental implications of our decisions and actions for Australia, the international community and the biosphere; and
    - ii) we need to take a long-term rather than short-term view when taking those decisions and actions.

5.4 More practically, ESD will mean changes to our patterns of resource use, including improvements in the quality of our air, land and water, and in the development of new, environmentally friendly products and processes.

5.5 The NT Government has recognised the concept of ecologically sustainable development in the Intergovernmental Agreement on the Environment (IGAE). Sustainability reporting implements the agreement by the parties to the IGAE that

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<sup>57</sup> <http://www.environment.gov.au/about/esd/publications/strategy/intro.html>. Accessed 09/03/11

<sup>58</sup> <http://www.environment.gov.au/about/esd/publications/strategy/intro.html>. Accessed 4 March 2011.

'policy, legislative and administrative frameworks to determine the possibility of land use, resource use or development proposals should provide for [amongst others]...the assessment of the regional cumulative impacts of a series of development and not simply the consideration of individual development proposals in isolation'<sup>59</sup>.

### *Development in the NT*

- 5.6 The EDO recommends that the EPA use the 'theme' based approach to sustainability modeling to begin. Areas of the NT experiencing a range of development pressures, such as Darwin Harbour, could be used as case studies in the report.

### *What is sustainability in the NT?*

- 5.7 In its report, 'Ecologically Sustainable Development in the Northern Territory' (NSES), the EPA recommended the adoption by the NT Government of the national definition of ESD as defined in the National Strategy for Ecologically Sustainable Development<sup>60</sup>. The EPA has identified key principles of ESD that the NT government should be implementing into governance structures in the NT.
- 5.8 The EPA has stated that to progress its functions to undertake sustainability reporting, consideration will be given to the promulgation of the EPA endorsed principles of ESD. In its report, the EPA recommended the use of ESD indicators as a critical requirement to develop and implement governance mechanisms for the application of ESD.<sup>61</sup> The EPA adopted the definition of ESD stated in the NSES and the following key principles of ESD:
- (a) Integration: Decision-making processes should effectively integrate both long-term and short-term economic, social, environmental and equitable considerations.
  - (b) Precautionary principle: Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
  - (c) Inter-generational and Intra-generational Equity: The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. Intra-generational equity involves consideration of equity within the present generation.

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<sup>59</sup> Australian Government, Intergovernmental Agreement on the Environment, Schedule 2, Clause 3(ii) accessed at <http://www.environment.gov.au/about/esd/publications/igae/index.html> on 11 August 2011.

EPA NT (not dated). "Ecologically Sustainable Development in the Northern Territory". Advice to the Minister for Natural Resources, Environment and Heritage.

<sup>61</sup> EPA Northern Territory, 'Ecologically Sustainable Development in the Northern Territory'

- (d) Conservation of Biological Diversity and Ecological Integrity: The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.
- (e) Improved Valuation, Pricing and Incentive Mechanisms: This includes recognition of the principles that the costs of environmental externalities should be internalized and that the polluter should bear the costs associated with environmental pollution.
- (f) Public Participation: Decisions and actions relating to ecologically sustainable development should provide for broad community involvement on issues which affect them.

*Where can NT improve on existing sustainability reporting models?*

5.9 EDO recommends EPA NT precisely define the goal, purpose, outputs and activities of sustainability reporting:

- (a) Goal: achieve sustainable development.
- (b) Purpose: improve environmental policy and increase political will for sustainable development.
- (c) Outputs: report against each SDI with reference to the caps and recommendations for action if the cap is not met.
- (d) Activities: actions that meet the caps (for example, changed development regulations, and increased enforcement of pollution).

5.10 EDO has one further recommendation in addition to other recommendations previously made by Charles Darwin University<sup>62</sup> for improving on existing sustainability reporting models:

- (a) Add CAP to the model. This means an incorporation of a numerical cap, or “limit” to the model.

5.11 Caps

- (a) Typically, sustainability indicators are used as a part of sustainability assessments<sup>63</sup>, which do not necessarily lead to improved outcomes. EDO recommends that NT EPA use them as a part of *achieving* sustainability. Indicators can be used to guide *intervention and management actions* that protect the environment over time. This model takes sustainability reporting a

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<sup>62</sup> See Garnett, Stephen and Huchery, Cindy, “Reporting Sustainability in the Northern Territory” (31 May 2010), Charles Darwin University.

<sup>63</sup> Rametsteiner, E., H. Pülzl, et al. (2011). "Sustainability indicator development--Science or political negotiation?" *Ecological Indicators* 11(1): 61-70.

fundamental step further than a model based on a concept of indicators that merely *measure* change, and report this difference (or similarity) over a period of time but finishes at that point.

- (b) From the available literature on sustainability reporting, it is evident that to date the selection of indicators has not resulted in an effective use of resources to achieve an outcome, because there has not been a clear process for the selection<sup>64</sup>. For example, historically indicators have been selected based on historical practices and regulations, or based on the intuitive assessment of experts. A more targeted approach is to consider “what is the environmental question we want answered from our indicators?”
- (c) However, sustainability reporting should have the ability to *monitor and measure* progress towards sustainable development *objectives*. A given indicator does not say anything about sustainability, unless a reference value such as thresholds is given to it<sup>65</sup>.
- (d) For example, strong sustainability positions demonstrate the need to maintain a given stock of natural assets. Consequently the overall carrying capacity of the environment takes precedence in setting a threshold for an indicator<sup>66</sup>. This means that the ability of a given indicator to withstand loss (or change) must be known prior to the commencement of the reporting scheme. An improvement on existing schemes would be an indicator set with pre-determined goals (targets or caps). The reporting aim would be to measure progress towards that goal.
- (e) This ability to withstand loss or change would be set as a *limit to loss or change*. In this way, a limit can be seen as a cap, similar to targets which are commonly set in other sectors (such as the finance and health industries, which aim for example, a 5% increase in a given attribute by a certain timeframe).
- (f) The United Nations Millennium Development Goals<sup>67</sup> contain examples of indicators (of development) that use goals or caps:

The 8 Millennium Development Goals are:

- i) End poverty and hunger

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<sup>64</sup> Niemeijer, D. and R. S. de Groot (2008). "A conceptual framework for selecting environmental indicator sets." *Ibid.* **8**: 14-25.

<sup>65</sup> Lancker and Nijkamp (2000) in: Singh, R. K., H. R. Murty, et al. (2009). "An overview of sustainability assessment methodologies." *Ibid.* **9**(2): 189-212.

<sup>66</sup> Munday, M. and A. Roberts (2006). "Developing Approaches to Measuring and Monitoring Sustainable Development in Wales: A Review." *Regional Studies* **40**(5): 535-554.

<sup>67</sup> <http://www.un.org/millenniumgoals/>. Accessed 06/07/11

- ii) Universal education
  - iii) Gender equality
  - iv) Child health
  - v) Maternal health
  - vi) Combat HIV/AIDS
  - vii) Environmental Sustainability
  - viii) Global partnerships
- (g) Within (vii) Environmental Sustainability are the following targets, only one of which is a numerical cap<sup>68</sup>:
- i) Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
    - Proportion of land area covered by forest
    - CO2 emissions, total, per capita and per \$1 GDP (PPP)
    - Consumption of ozone-depleting substances
    - Proportion of fish stocks within safe biological limits
    - Proportion of total water resources used
    - Proportion of terrestrial and marine areas protected
    - Proportion of species threatened with extinction
  - ii) Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
- (h) Clearly (g) ii) has the most defined cap, which makes the incorporation of results into policy development very easy. The indicators listed in (g) i) could easily be improved by including a numerical limit into each of the targets.
- (i) The existence of caps for indicators at the national level (can be voluntary targets), will help to avoid ambiguity, and increase clarity of purpose<sup>69</sup>

5.12 The most common conceptual frameworks for developing sustainability reporting models are the DPSIR, PSR or DSR models, which organize and structure indicators in the context of a so-called causal chain<sup>70</sup>.

<sup>68</sup> <http://www.un.org/millenniumgoals/environ.shtml>

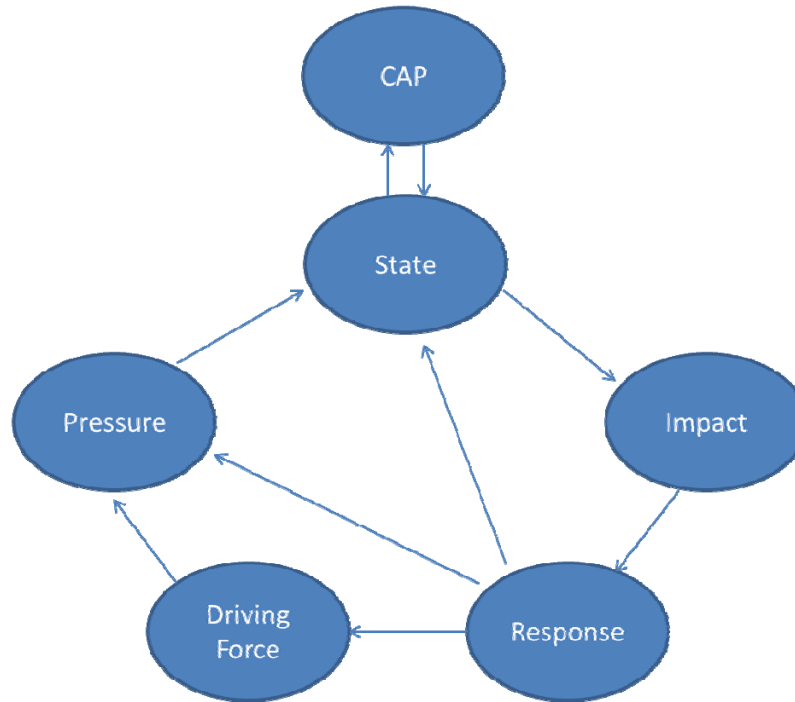
<sup>69</sup> UN (2007). Indicators of Sustainable Development: Guidelines and Methodologies. Third edition. p 30.

<sup>70</sup> Niemeijer, D. and R. S. de Groot (2008). "A conceptual framework for selecting environmental indicator sets." *Ecological Indicators* 8(1): 14-25.

5.13 EDO recommends EPA adopt the driving force – pressure – state – impact – response model (DPSIR) with an additional element: CAP added to achieve:

- (a) The aim of adopting a cap
- (b) Avoiding duplication (SOE has already adopted this model)

The proposed model would look like this:



**DPSIR model; adapted from Niemeijer & de Groot (2008)**

5.14 Case study explaining the model: Phosphorus loads in fresh surface water

- (a) Phosphorus contributes to degradation in water quality. Comparative studies of phosphorus concentrations over time and catchments leads to the *state* of water quality being known. This state, and current scientific knowledge, gives rise to a *cap*, which in this case study would be a given concentration of phosphorus in surface water at a given place. This cap can be an absolute cap, or a reducing cap over time (staged reduction in phosphorus concentrations).
- (b) The *impact* of the state in this instance would be changes to water quality and physical properties, for example algal blooms and reductions in dissolved oxygen.
- (c) The *response* (to the pollution occurring) could be (for example) a nutrient trading scheme in a catchment or stricter regulation of fertilizers, or both.
- (d) The *driving force* (for change) would be higher fertilizer prices, pressure for clean catchments, pressure to reduce fertilizer use etc.

- (e) The *pressure* (or cause of the problem) comes from phosphorus in fertilizer leaching into surface water.
- 5.15 The introduction of a cap to the model represents a new theory of thought which EDO believes will be a more powerful agent for change. The standard approach to SoE reporting in Australia, (and some sustainability reporting from other jurisdictions) utilizes the *knowledge production* theory. This means the development of sustainability indicators is driven by the search for scientific, technical objective knowledge. EDO recommends the *norm creation* theory is adopted by EPA NT for the development of sustainability indicators. The norm creation theory places a preference on the value of nature, as well as aiming for inter-generational equity as an outcome.<sup>71</sup>
- 5.16 A model based on the theory of knowledge production recognises that there is a difference between scientific data and the *value* society places on the environment. Whereas a model based on the theory of *norm creation* develops a socially acceptable value that becomes built into the sustainability reporting tool. By adopting a cap on pollution, EPA will introduce the idea that pollution is not infinite, and by very definition needs to be limited. This is creating a “norm” that pollution should be within acceptable, sustainable limits.
- 5.17 The adoption of this theory, or approach to sustainability reporting, will require all of the issues addressed in Section 4 to be acknowledged, and addressed. For example, is there political will in the NT right now that will support the limiting of pollutants in the environment, which will come at a cost to government, industry and the general public? Does EPA NT have a firm idea of what sustainability is? There is a real chance that without the development of appropriate caps, and without the acceptance of these caps as the norm, that any sustainability reporting will fall into the pattern of SoE reporting and will have very little influence on sustainable development.
- 5.18 It is important to note that while indicators can be selected from existing sources, the caps should be set at a statewide level and be truly appropriate for NT. The setting of appropriate caps will be the deciding factor into whether or not sustainability reporting can have a real impact on sustainable development. Comparability between jurisdictions will not be lost, as achievements can be measured as a percentage change.

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<sup>71</sup> Rametsteiner, E., H. Pülzl, et al. (2011). "Sustainability indicator development--Science or political negotiation?" *Ibid.* **11**: 61-70.

### *Recommended model scope*

- 5.19 Sustainable development is a broad-ranging theme. As well as the environment, true sustainable development considers factors such as the economy and other institutions, and human health<sup>72</sup>.
- 5.20 The EDO recommends initially developing a small model for sustainability reporting that has a specific focus on the environment (or even specific sectors of the environment, for example air or water), and in time increasing the scope to include indicators from social and economic sectors.
- 5.21 The EDO recommends that the EPA set legislation as a theme of the model for the following reasons: The EPA's report finding that ESD is largely not implemented in legislation and recommending that ESD be implemented in legislation; and the importance of best practice regulation to achieve better decision and policy-making.
- 5.22 EDO recommends a period of data collection that focuses on validating scientific knowledge in the NT context. Before appropriate targets can be set, the *state* of the environment needs to be known.
- 5.23 In addition, EDO recommends that a consistent, longitudinal assessment of the political support for sustainability reporting (and sustainable development) over time is undertaken concurrently. It is very important to monitor the development of policy so that if targets are not met, appropriate measures can be taken. The implementation of outcomes from sustainability reporting to achieve ecologically sustainable development is difficult without political support.

### *Setting caps*

- 5.24 The EPA should recommend caps as an input and an outcome of sustainability reporting. The EPA could recommend caps as part of its function to report on the cumulative impacts of development<sup>73</sup> and its ability to advise the public and private sectors on objective, targets and standards<sup>74</sup>.
- 5.25 EDO recommends that caps are selected by using a combination of local/state knowledge of particular environments and best practice standards that have been adopted in other jurisdictions. The EPA should recommend caps in accordance with section 7(2)(b)(i) and (ii) of the *EPA Act* requiring caps to be sound and scientifically based and consistent with best practices.

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<sup>72</sup> For example, see the two CDU reports.

<sup>73</sup> See section 5A(1)(c) of the *Environment Protection Authority Act*.

<sup>74</sup> See section 5B(1)(c) of the *Environment Protection Authority Act*.

## *Audience*

- 5.26 Best practice reporting principles for State of the Environment reporting requires that the audience for the reporting is identified before commencing the report.<sup>75</sup> One essential recommendation is to have a strong focus on the target audience, as different structures of SoE reports will be comprehensive to different audiences.
- 5.27 Sustainability reporting is important to assess current policies and potentially drive policy change to achieve ESD. EDO recommends that, in accordance with the principles of ESD, the audience should encompass the public. This is consistent with the statutory requirement for the EPA to publicly release reports on environmental quality.<sup>76</sup> Reporting that is accessible to the public would also be accessible to government and businesses as well. EDO recommends a reporting structure that includes information that is easily accessible by the public together with detail that is meaningful for policy-makers.

## *Principles of ESD*

- 5.28 The goal of sustainability reporting in the Northern Territory should be to achieve ESD. The model recommended by EDO implements the principles of ESD, as follows:
- (a) Sustainability reporting implements the principle of integration by reporting on the short-term and long-term impacts of development on the environment to inform policy-makers. A model that is based on broadly accepted sustainability indicators enables the model to be followed in other jurisdictions and for comparisons regarding outcomes, policy and decision-making to be made to other jurisdictions that are already undertaking sustainability reporting.
  - (b) The principles of precaution and inter-generational equity should be implemented in setting caps for the model.
  - (c) Setting caps implements the principles of the conservation of biological diversity and ecological integrity by capping development and pollution to avoid exceeding 'tipping points'.
  - (d) Capping and pricing pollution implements the principle of improved valuation, pricing and incentive mechanisms and the principle that the polluter should bear the costs associated with environmental pollution.

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<sup>75</sup> Beau Austin and Steven Garnett, *State of the Environment Report: A Review of Theory and Practice, Final Report 2009*, Charles Darwin University, 18.

<sup>76</sup> See section 5A(1)(d) of the *Environment Protection Authority Act*.

- (e) Stakeholder engagement in setting targets backed by scientific knowledge implements the principle of public participation. Of particular relevance to the Northern Territory is the importance of Aboriginal knowledge in setting caps.

## 6. Further work

### *Further recommendations*

- 6.1 EDO strongly supports the development of best practice sustainability reporting in NT and makes the following further recommendations for the development of sustainability reporting:
  - (a) Identifies the audience as the community and policy-makers and publish the report in formats accessible to both audiences.
  - (b) Identify the NT priorities for ecologically sustainable development.
  - (c) Identify Federal priorities for ecologically sustainable development.
  - (d) Identify the community's priorities for sustainable development.
  - (e) Engage with Aboriginal knowledge regarding ecologically sustainable development.
  - (f) EDO believes that the collection of data will need to involve Federal and Northern Territory government agencies, the community, Aboriginal communities, NGOs and industry.
  - (g) Leave room for progressive learning processes and emergent outcomes to arise.
  - (h) Align timeframes for sustainability reporting with funding to EPA to prepare the sustainability reports.
  - (i) Engage with government departments and agencies to seek out the level of cooperation that EPA will require to fulfill its functions under the *EPA Act*.
  - (j) EDO recommends considering appointing an expert committee to make recommendations to the EPA and assist the EPA in interpreting data for the sustainability reporting similar to other jurisdictions in Australia. For example, Commonwealth State of the Environment reporting required under the *Environment Protection and Biodiversity and Conservation Act 1999*.
  - (k) Engage with government, the community, NGOs, businesses and industry so that the goals and outcomes of sustainability reporting are understood, appreciated and implemented.

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## 7. Useful websites

- 7.1 <http://www.poverty.org.uk/index.htm>
- 7.2 <http://www.irc.nl/page/6836>
- 7.3 <http://www.un.org/millenniumgoals/environ.shtml>
- 7.4 <http://www.globalreporting.org/ReportingFramework/ReportingFrameworkDownloads/>
- 7.5 <http://www.isdrs.org/>
- 7.6 <http://www.google.com.au/search?q=framework+for+strategic+sustainable+development&ie=utf-8&oe=utf-8&aq=t&rls=org.mozilla:en-US:official&client=firefox-a>
- 7.7 <http://www.realchange.nu/framework-strategic-sustainable-development-fssd>

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