

09 February 2011

The Director-General: Department of Environmental Affairs  
Attention: Ms Joanne Yawitch  
Deputy Director-General: Climate Change  
Private Bag X447  
Pretoria  
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**ATTENTION : MS JOANNE YAWITCH**

Dear Ms Yawitch

**NATIONAL CLIMATE CHANGE RESPONSE GREEN PAPER 2010**

WESSA is South Africa's oldest and largest membership based environmental non-government organisation, operating across all regions of South Africa, and our mission is to promote public participation in caring for the earth.

In response to the National Climate Change Response Green Paper, 2010, WESSA would like to make the following comments:

Considering the duality of South Africa's position between causes and effects of projected climate change it is very important that the country adopt a position on the need to reduce both these through firm and pragmatic policy and action. We would like to commend the Department on the development of a well-reasoned Green Paper that addresses this complex topic with resolve.

We have, however, identified potential gaps in the discussion of specific issues, as well as between them, which are discussed in further detail below:

**1. GENERAL COMMENT**

WESSA fully supports the idea that climate change is everyone's business and partnership with the people of South Africa (SA) is essential. This appreciation implies ready access to information and the encouragement of innovation.

WESSA fully supports the objectives of the SA Climate Change Response Strategy, which will need to be associated with specific actions to make them possible. We therefore fully support the mainstreaming of SA's climate change response into all national, provincial and local planning regimes. The achievement of the objectives of the response strategy outlined in the Green Paper will depend on the levels of commitment to such strategies and allocation of resources to them. We urge that both be significant.



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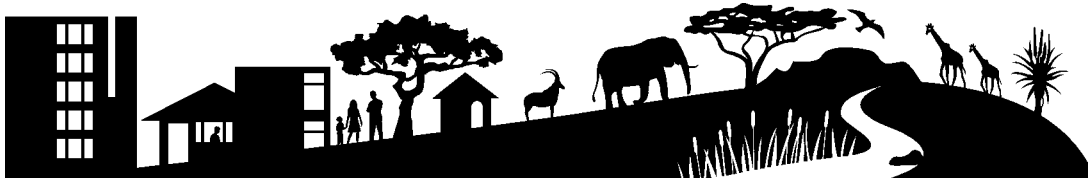
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## **1.1 Integration between Key Adaptation Sectors**

While we agree with the need for a focused approach to climate change mitigation and adaptation for each of the Key Adaptation Sectors discussed in the Green Paper, it is critical that the linkages between these sectors is clearly established. Such linkages would point to indirect pressures on each of these sectors and the need for integrated decision-making in responding to climate change. Care must be taken to ensure that the stimulation of new industries that could further specific climate change response objectives within any of the Key Adaptation Sectors do not inadvertently lead to unanticipated environmental impacts that conflict with the objectives of the other Sectors.

## **1.2 Principles**

We fully support the principles upon which the Green Paper is based, particularly the adoption of a risk averse approach (precautionary principle), and the emphasis on informed participation through education and awareness programmes.

### **1.2.1 Sustainable Development and Responsible Land-use**

Regardless of the Key Adaptation Sector under which any of the proposed responses or interventions is classified, all of these actions will need to be guided by the principles of sustainable development and responsible land-care, as it is articulated in our environmental legislation.

The principles and definition of sustainable development will need to be spelt out in a way that highlights how this is to be achieved without the high carbon trajectory traditionally associated with development. It will be necessary to emphasise the non-consumptive aspects of development including the development of sustainability consciousness, the development of natural resource stewardship, the development of national rehabilitation projects, the development of a corporate ethic around the internalization of socio-environmental costs, and the development of mechanisms for small renewable energy suppliers to feed in to the national grid.

### **1.2.2 Ecosystems Based Adaptation**

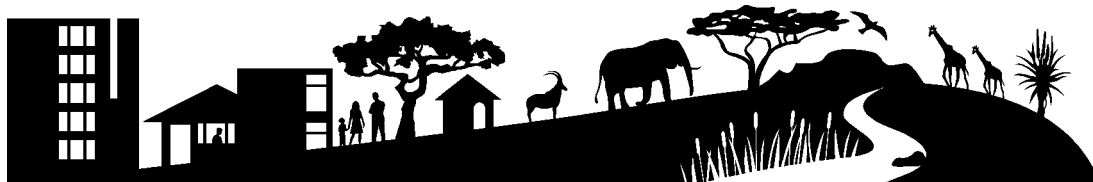
Among the principles guiding South Africa's response to climate change, we would strongly recommend including Ecosystems Based Adaptation (IUCN 2008, 2009) – an approach that is already entrenched in the Green Paper, but which need to be articulated. This approach is particularly important for vulnerable human communities and already stressed environments. It can also improve resilience in the water sector, where restoration can address historical but reversible impacts. An Ecosystems Based Adaptation approach further provides for the linkages between Key Adaptation Sectors, where the protection of resources for sustained and enhanced ecosystem goods and services can be integrated with, for example, mitigation against climate change related human health impacts (such as water borne diseases).



## 2. SPECIFIC COMMENT

The following comments are specific responses to issues raised by the Green Paper, in the order that they appear in the document:

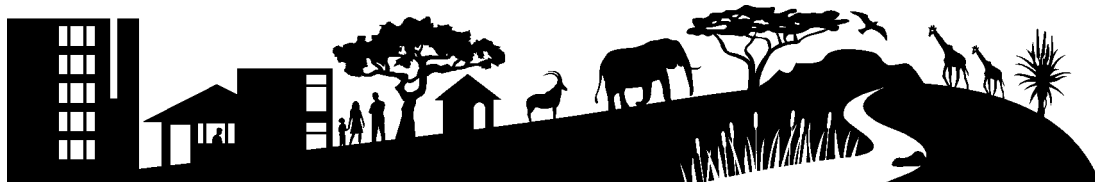
Section	Discussion
1	<p>The origins of the global warming trend can be traced back to the 18<sup>th</sup> Century, and the risks and impacts associated with it go far beyond upsetting sustainable development and the Millennium Development Goals. Climate change projections based on the business as usual approach that most nation states are currently adopting suggest life-threatening impacts on a hitherto inconceivable scale. It should be noted that even short-term indicators of climate change impacts have been alarming, and that it is not only the medium- to long-term climate change projections that have potentially catastrophic impacts on the normal national agenda regarding development and global economic competitiveness.</p> <p>WESSA fully supports the avoidance of costs associated with delay and inaction– responses which have unfortunately been prevalent at international decision making level despite very strong calls from civil society across the globe for actions to be much more substantive. While WESSA fully supports the development of information management systems and the use of accurate scientific data in helping to map out the detail of SA’s mitigation and adaptation strategies, we urge that time is not wasted on the detail when general trends and their causes are well understood and credible.</p>
3	<p>Currently many countries are adopting the adaptation response over a mitigation response as it is more in keeping with the industrial development paradigm. However this approach could well exacerbate elements of climate change to which the objective is to adapt. The meaning of the term “balanced” is therefore key and WESSA urges that mitigation, i.e. the prevention of further intensification of the problem, should be prioritized in terms of the polluter pays principle.</p>
4	<p>Ninth bullet point. Government should <i>direct</i> as well as support and facilitate mitigation plans for energy, transport and industrial sectors.</p>
4	<p>Eleventh bullet point. WESSA understands the need to allow for a reasonable period of transition for each sector from high carbon to lower carbon forms of production. While we are sympathetic to the intention here, we are concerned about the strategy providing “time” for this transition. This is not a commodity that is available in large supply when it comes to climate change response, and</p>



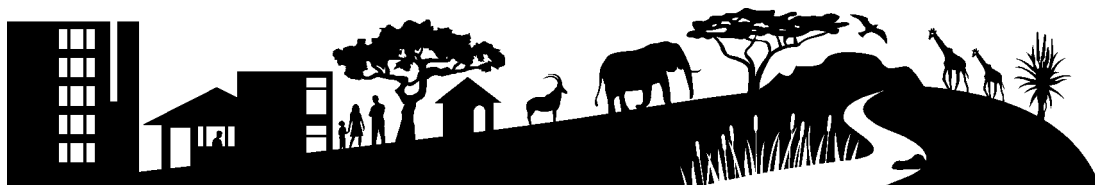
	clear but realistic timeframes will need to be determined to ensure a reasonable transition period that optimizes both adaptation and mitigation responses. While the idea of SA stabilizing its emissions for a decade after peaking in 2025 may seem reasonable considering our developing country status, it is critical considering the urgency of the situation, that every country is ambitious in its aims to avoid runaway climate change – an eventuality that would be likely to upset the best laid plans.
5	Fifth bullet point. WESSA is concerned about the reference to “adaptation response” here. If sufficient mitigation measures are not put into place, the projection for such sectors is dire indeed, not only impinging upon the integrity of the biophysical environment, but potentially devastating to the many human activities that rely on the free ecosystem goods and services provided by healthy ecosystems.
5.1	This section provides a salutary analysis of the water situation. It should, however, be borne in mind that there is wide agreement that large dams are, after full cost accounting, more destructive than productive and that the SA landscape can ill afford to accommodate more schemes of this sort, considering the attendant problems of displacement of people and the disruption of ecosystem services. Alternative measures to assure the right to basic water supply are encouraged, and the Green Paper commendably explores some of these.
5.1.1	This section suggests that SA’s track record for such management systems has been satisfactory. WESSA would challenge such a view considering the results of nation-wide assessments in the water sector, such as the Blue Drop and Green Drop reporting.
5.1.5	We fully support water re-use strategies.
5.1.6	We fully support these statements.
5.1.7	We fully support these statements.
5.1.8	Improved use of rainwater harvesting is strongly supported but this should be accompanied by appropriate education programmes. It is recommended that rainwater harvesting should be linked to the development of simple technologies to make it possible to flush toilets using rain water.
5.1.10	WESSA fully supports desalination technologies as a feasible opportunity to enhance the resilience of our water supplies, but notes that this must be investigated and implemented with careful guidelines. Of particular concern are estuaries, which are particularly vulnerable to the potential negative impacts (such as salinity changes), leading to a disruption of estuarine function and attendant loss of ecosystem goods and services.



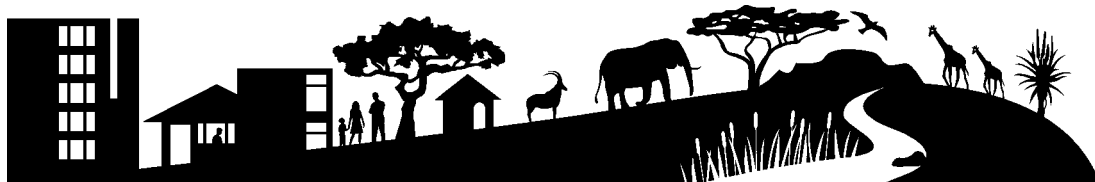
5.1.11	We fully support these statements, and suggest that the roll out of the National Programme of Action for the Protection of the Marine Environment from Land-based Activities (Department of Environmental Affairs and Tourism, 2008) must be prioritized and implemented.
5.1.12	We fully support these statements.
5.1.14	This is a repetition of section 5.1.7.
5.2	It is pertinent that the carbon cost of transport servicing the agricultural sector is also high, and this will need to be factored into the sector's greenhouse gas emissions accounting. The potential contribution of the rail network in meeting agricultural sector transport needs should be considered.
5.2	Third bullet point. It is suggested that the response plan's emphasis needs to be on local food security (a chronic concern for SA), rather than trans-boundary competitiveness.
5.2.1	This section needs to establish the link between the water sector and the agricultural sector, considering that the largest proportion of South Africa's allocable water resources that is used by the agricultural sector (with reference to the first bullet point), and it is the sector most likely to first suffer acute impacts as a result of climate change. Investigations into adaptation options, as well as mitigation interventions, should therefore be strongly directed towards options that improve water efficiency, and hence the resilience of the agricultural sector, but also indirectly of the water sector.
5.2.3	WESSA would recommend an addition to this response would be to actively involve significantly more people in basic food production activities.
5.2.5	We fully support these statements.
5.2.5	We suggest an additional response following 5.2.5. Given that the increase in alien invasive species spread has been identified as a key challenge to the sector (with reference to the fifth bullet point), there should also be a suggested response to this threat. This would be a focused approach to alien invasive species management (avoiding the spread of "new" alien invasive species, the management/eradication of known alien invasive species), as well as research into the opportunities for the use of the plant material removed through management/eradication activities, with the potential for socio-economic returns and market diversification, rather than considering this material as waste (i.e. adding value to alien invasive management/eradication programmes, while also adding value to an otherwise wasted product).



5.3	There is a likelihood that displaced people from other parts of the southern African region and elsewhere migrating towards South Africa because of climate change factors, could well exacerbate human health issues. SA's role as a strategic mitigating influence, at policy level, must be employed to its fullest to as far as possible avoid the potential impacts of climate change that could lead to such mass migration and its attendant challenges.
5.3	First bullet point. Given the uncertainties of immediate impacts on human and ecosystem health, a very precautionary approach is advisable. We need therefore to assume, and plan for, high health and welfare impacts as a result of climate change and the other negative effects triggered by this phenomenon.
5.3	Fifth bullet point. Gradual temperature changes may be difficult to measure but they will add up to significant changes for which it is relatively easy to predict physiological effects for humans and other organisms. It is important therefore that there should be no "wait and see" approach on this score.
5.3.1	We fully support measures to improve ambient air quality.
5.4	Page 13, paragraph 3. This section suggests that the use of coal as the primary fuel for power generation could continue <i>ad infinitum</i> were it not for the pressures relating to climate change. Adaptations in the energy sector should become a necessity, independent of climate change related issues, considering not only that coal as a fossil fuel is a finite resource, but that South Africa's coal reserves are reportedly significantly smaller than previously estimated. It is suggested that coal is perhaps only <i>comparatively</i> "abundantly available" in South Africa, when relating to global averages.
5.4	WESSA appreciates this forthright depiction of SA's coal dependency.
5.4	This section and the proposed responses of the energy sector to climate change do not appear to discuss the role of Independent Power Producers in the document, which is a gap that will need to be addressed.
5.4	The benefits of renewable energy include the facts that costs are declining, and that it can be locally deployed as well as connected to the national grid. It is additionally more resilient in terms of fuel supply, whereas carbon-based and nuclear fuels might become increasingly volatile in terms of accessibility and price. Geopolitics as well as phenomena like peak oil may well play a role here. Renewable energy plants, once installed will be less vulnerable to such fluxes. The obvious plus factor of limited greenhouse gas emissions bears repetition.
5.4.1	The inclusion of a climate constraint into the Integrated Resource Plan for Electricity Generation and the Integrated Energy Plan is



	welcome.
5.4.3	WESSA supports the carbon tax policy and its roll out. It will be critical to ensure that mechanisms for the management of funding generated by carbon tax will be invested in climate change responses that effect improvements 'on the ground'.
5.4.5	WESSA strongly supports the development of demonstration programmes.
5.4.6	WESSA would fully support any move to improve the renewable energy feed-in tariff. However this should not necessarily be limited to large-scale investments. Ordinary citizens should be encouraged to participate.
5.4.7	WESSA fully supports these measures.
5.4.8	The innovative use of waste biomass, especially alien invasive plants, for energy is strongly supported. Reference is made to our comment on section 5.2.5, above.
5.4.9	WESSA is hesitant to support the pursuit of nuclear energy until a safe, environmentally friendly, and achievable method of disposing of radioactive waste has been found. In addition, the escalating costs, fuel accessibility, facility footprint, and coastal/aquatic impacts of nuclear energy, will have to be carefully considered
5.4.13	WESSA fully supports these measures.
5.4.14	Considering this consciousness-raising approach, designing effective public awareness and participation programmes will be critical, bearing in mind that the most effective means of communication vary enormously across the country. Such a strategy should include regular updates on national radio, television and in other media, which will need to be adequately budgeted for.
5.4.15	WESSA fully supports these measures.
5.4.16	WESSA fully supports these measures.
5.4.17	This should not be restricted to large-scale office buildings, but could be readily applied for almost all new development. There are already alternative technologies available in South Africa to improve the energy and water efficiency for most new development, but there is a significant inertia in the sector that continues to favour conventional and less efficient design. The requirement to design an energy and water efficient development, within the scope of that development, should be a legislated prerequisite. A retrofit target, possibly incentivized, for older developments could also be considered.
5.4.18	It is assumed that this response is predominantly aimed at the commercial and industrial sectors. Consideration should be given here to the enormous waste generation potential of retro-fitting operations for obsolete technologies; the avoidance of waste, and



	particularly hazardous waste, should be a guiding principle in this process.
5.4.22	Guidelines for renewable energy, and energy efficient/low carbon technologies must include reference to environmental limits, to ensure the continued delivery of ecosystem goods and services, and the resilience to climate change effects that natural habitats provide. In addition, standards and guidelines for renewable technologies should be as user-friendly as possible, as onerous or complex guidelines may discourage the development of these technologies.
5.4.23	A regulatory framework to support carbon capture and storage will need to be untainted by some of the financial mechanisms currently criticized for moving money but not resulting in a tangible reduction in carbon emissions.
5.5	Under “Commerce and Manufacturing”. Awareness and acknowledgement of the fact that SA is trade-exposed and vulnerable to measures taken both internationally and nationally is reassuring. It will be best for SA to comply with best practice as soon as possible, and in this regard the proposed climate change action response plan is welcome.
5.5	The “Tourism” section does not appear to extend to the hospitality sector. Tourism and hospitality, although related, are not synonymous, and although tourism may well carry a higher carbon cost, key responses within the hospitality industry in relation to energy efficiency, water efficiency, and waste production may make a significant contribution towards a more sustainable and resilient environment, as well as reducing carbon emissions. Hotels, restaurants and other tourist destinations have a valuable role to play in promoting the idea of green stays that address energy and other environmental concerns through responsible choices and good practice, and thus presenting a positive image of SA to the world.
5.5.17	This section should be expanded to ensure that responsible tourism responses include water efficiency and optimised waste management.
5.6	Transport mitigation offers other co-benefits as well. Despite domestic industry, SA is hugely dependent on imported liquid fuels derived from non-renewable oil resources. There is an increasing realization that these resources cannot be relied on indefinitely, and the notion of peak oil is gaining mainstream recognition. Renewable technologies rely significantly on oil byproducts for their manufacture. Thus, apart from the carbon emissions aspects of much more cautious oil consumption, there is the equally important resource conservation consideration. Therefore very significant changes in SA’s transport system are advisable from roads for non-motorised transport to much more emphasis on rail, tram and bus public transport.
5.6.1	We fully support these statements.

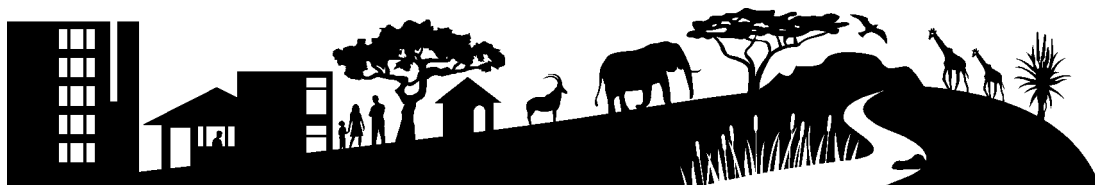




5.6.2	We fully support these statements.
5.6.9	While this section deals with the planning and development of future transport infrastructure that is at low risk from the extreme weather events projected with climate change, this section does not address the existing transport infrastructure that is, in some areas, at high risk from these processes. Already, for example, we are re-building road networks damaged by extreme weather events that are likely to re-occur with increased frequency and increased destructive capacity, without considering these projections. Consideration should be given to addressing the fate of existing, inappropriate transport infrastructure in this response.
5.7	While this section accurately identifies the cost (economic as well as environmental) or poor land-use decision making (inappropriate location of infrastructure, as well as poor land management), no response to this trend is suggested. Considering that we continue to see permissions granted for highly inappropriate development (for example locating high value infrastructure within high (to certain) risk floodplains in the coastal zone), it is strongly recommended that a key response will need to include legislation/regulation to avoiding the development and/or settlement of high risk areas. This has the additional effect of protecting the insurance industry through disaster risk reduction.
5.8	The section “Marine Biodiversity” does not appear to consider marine pollution as a key threat to marine biodiversity. The extent and significance of the pollution threat to marine biodiversity has been identified in the Department’s National Programme of Action for Protection of the Marine Environment for Land-based Activities, 2008 (NPA), and should be considered here, given the impacts of marine pollution on ecosystem goods and services, as well as the potential for synergistic impacts as a result of climate change related ocean change. The considered response to this threat will need to be correspondingly considered, and in parallel with a vigorous roll-out of the NPA.
5.8	“Marine Biodiversity”, bullet point 3. It should be noted that salinity levels within estuaries could also be affected by new desalination plants being installed in estuarine systems. This practice should be avoided.
5.8	“Marine Biodiversity”, bullet point 3. This section suggests that the altered (increased) salinity levels in estuaries anticipated in climate change projections is the sole impact upon these systems with altered precipitation patterns leading to reduced runoff. This suggests a bias towards large marine dominated systems, which are in the minority in South Africa; a large proportion of our estuaries are temporary open/closed systems where, in an extreme scenario, reduced runoff may lead to the loss of connectivity



	with the sea and a loss of estuarine function altogether. The effective (and collective) loss of these estuaries would severely constrain the fish nursery habitats available along the coast. Also, being strongly freshwater influenced and therefore often at salinities between fresh and marine waters, the isolation of these systems may mean that they would cease to offer habitat to those species unable to thrive in the rising salinities of the marine environment. In addition to the significant loss of biodiversity, in such a scenario there would be significant detrimental impacts upon important recreational and commercial fisheries, and other ecosystem goods and services.
5.8.2	WESSA strongly supports the expansion of key protected areas.
5.8.10	WESSA supports the increased protective measures for coastal systems. However, this should be extended beyond those habitats known to provide immediate relief from the destructive potential of coastal erosion. This response should include support for the Marine Protected Area (MPA) expansion strategy to conserve biodiversity and ensure the continued delivery of the goods and services delivered by the ecosystems in the coastal zone. The MPA expansion strategy should also be influenced toward increasing protection for estuarine habitats to allow for the ecological linkages between terrestrial, freshwater and marine habitats, and improved resilience against the changing interactions between these zones.
5.8.10	The “Marine Biodiversity” section should more fully address marine subsistence livelihoods and mechanisms to deal with the several conflicts that exist in this sector, conflicts that could be exacerbated by climate change related impacts.
5.8	“Commercial forestry”. There appears to be an overlapping discussion of the influence of climate change upon natural forest habitats, and timber plantations. These cannot be considered to be synonymous in their values or responses to climate change. It is strongly recommended that this section is re-structured to discuss the differing impacts of climate change upon forests and plantations, and the need for differing responses to these impacts, separately. It is further recommended that for timber plantations, the full life cycle of the trees is considered in estimating the carbon sink potential of the timber industry, knowing that the trees must necessarily be processed through energy intensive, and waste generating, treatments, that are carbon intensive (Some of these have been covered in the green paper text).
5.8	“Commercial forestry”. The carbon sink role of SA’s plantations needs to be compared to the role in this regard that would have been supplied by displaced indigenous vegetation.
5.8.17	This response should ensure that quotas are not only risk-averse, but necessarily guided by the fishery-specific scientific



	information and empirical evidence before granting quotas. In addition, this response should encourage and support the consumer awareness campaigns, such as the Southern African Sustainable Seafood Initiative (SASSI), to influence consumers towards sustainable seafood choices.
5.8.18	It should be noted that many aquaculture projects focus on the production of predatory fish. This has the potential to exacerbate climate change impacts, given the need to feed these animals large volumes of wild caught fish (including species that could otherwise be consumed by humans), and the generally poor conversion ratio of this carbon-expensive fish-food to edible protein for human consumption. Aquaculture and/or mariculture opportunities will need to be carefully guided by the Climate Change Green Paper principles, through appropriate regulation, to ensure that such initiatives can be an effective response to climate change, and removing their potential to exacerbate the situation.
5.8.18	This response should include support for the Marine Protected Area expansion strategy as a key mitigation against impacts of climate change upon the wild fisheries.
5.8.19	The notion of win-win outcomes for all in the fishing sector, although laudable, may be somewhat over-optimistic, and this objective must not over-ride the need for a precautionary approach to fisheries and biodiversity protection (with reference to comment on section 5.8.17).
5.9.2	While WESSA supports initiatives to treat and recycle what would otherwise be considered wastewater, it is critical that the ecological freshwater demands (quantitative and qualitative) of the coastal zone continue to be met (this is particularly true in urban environments, where coastal ecosystems are often most likely to be water stressed and assimilating large volumes of pollutants through the discharge of poor quality stormwater and wastewater/treated effluent). This one again emphasises the need to draw clear linkages between the Key Adaptation Sectors.
5.9.8	It is strongly recommended that green requirements extend to water efficient design and the minimisation of waste generation, as well as responsible waste management systems (re-use and recycling).
5.9.9	WESSA fully supports this section.
5.9	In response to the section on human settlements WESSA largely agrees with the analysis and suggested approaches. However, it would be beneficial for this section could draw the links between urban and rural livelihoods, and ensure the promotion of small sustainable communities within and outside city contexts. This response should draw the links between the demand for goods in



	<p>urban areas (and even ecosystem goods and services) leading to opportunities in rural areas to meet these demands. This could facilitate national spatial planning that effectively brings agriculture back to where people are living. This will greatly increase resilience capacity and facilitate healthier community ethos and regional responsibility for food, water, energy, waste, security and biodiversity. (The agricultural sector most readily lends itself as an example, where even small scale agriculture can be supported and developed to establish the links between the rural, urban and peri-urban farms to urban markets to support sustainable livelihoods. The lessons learned in the Integrated Water Resource Management projects hosted by the Department of Water Affairs, with reference to the proceedings of the workshop “Water and Poverty Alleviation: A Dialogue for Action”, October 2010, would be of particular value here).</p>
5.9.10	<p>With reference to Ecosystems Based Adaptation, WESSA would recommend an additional response in urban areas, being the identification of critical urban ecosystems and the development and implementation of management plans to ensure the continued and enhanced delivery of free ecosystem goods and services. It is important that urban ecosystems often support the highest value ecosystem goods and services as a proportional response to the number of people dependent upon these systems for livelihoods, risk abatement, or quality of life.</p>
5.9.11	<p>It will be critical to ensure that such interventions additionally identify risks to water availability (quantity and quality) as a result of upstream land-use and waste management. This further suggests the need to extend the focus of interventions from the farm/site level, to upstream interventions to secure access to healthy water resources.</p>
5.9	<p>Paragraph 3 under “Human Settlements, Infrastructure and the Built Environment – Coastal Areas”. This section should include a note on the value of estuaries along the coast, given that these habitats provide some respite from the generally high energy coastline. As a result, these systems have not only developed in to important breeding and nursery grounds for freshwater, estuarine and marine species, but have also attracted significant development best positioned to take advantage of the goods and services provided by these systems. It is not coincidental that the majority of the world’s largest cities are centred around estuaries (of the world’s 32 largest cities, 22 are located on estuaries).</p>
5.9	<p>Paragraph 3 under “Human Settlements, Infrastructure and the Built Environment – Coastal Areas”. This section suggests that coastal defence structures are the preferred or are the only option for the protection of coastal infrastructure from risk and damage as a result of coastal processes, as a response to climate change projections. This is in contradiction of the Integrated Coastal</p>



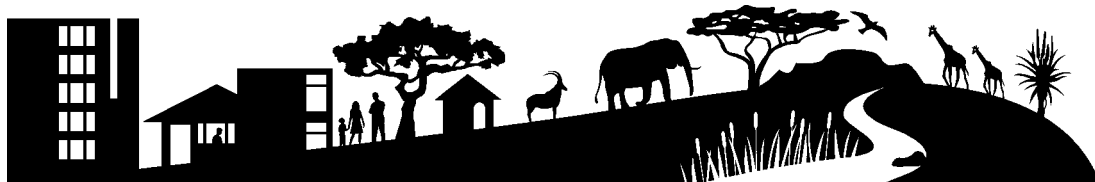
	<p>Management Act (No. 24 of 2008), and the phased retreat and improved planning principles of the Act, as advocated in the White Paper for Sustainable Coastal Development in South Africa, April 2000. It is understandable that coastal defence options must be considered to protect high value infrastructure that may be at risk from coastal erosion or sea-level rise, but for the remainder, the short-term opportunity cost of not developing in high risk zones, or even of relocating inappropriately located or high risk infrastructure would be far outweighed by the medium- to long-term benefits in risk abatement. In addition, the risks associated with the installation of sea defence are high; these defence systems can provide a false sense of security, with sea defence systems often failing, while sea defence systems also often have unpredictable impacts along other areas of the coast, merely transferring the risk to another section of coast. Therefore, the continued monitoring and assessment of vulnerable areas should inform the appropriate and most cost-effective response to minimising damage risks to society as a whole (including environmental cost accounting), rather than suggesting sea defence as the sole response to risk.</p>
5.9.14	<p>Ownership of intellectual property rights associated with seed varieties should remain in the commons to ensure the potential for self-sufficiency and seed storing and sharing.</p>
5.9.16	<p>It is critical that coastal planning takes into account the sustainable development principles articulated in section 63 of the Integrated Coastal Management Act (No. 24 of 2008). (Reference is made to section 1.2.1 of this letter).</p>
5.9.19	<p>It is suggested that in addition to improved coastal planning and management, existing poorly planned or inappropriate development should also be addressed. Such a response may be a process to identify existing inappropriate development that is likely to be vulnerable to climate change impacts that manifest along the coastal zone, and opportunities for the removal and/or relocation of such infrastructure, along with rehabilitation (where necessary) to improve the resilience of the coast as a whole.</p>
5.9	<p>The section on “Waste” focuses closely on waste related greenhouse gas emissions, while not identifying broader waste related issues that have the potential to directly or indirectly exacerbate climate change related impacts. In addition to the commendable harvesting of fuel gases from concentrated waste, and the use of wasted by-products, the waste hierarchy should demand that our response is to first avoid generating waste, and then to recover and/or recycle. Waste must be treated as a resource and economic opportunity that is not limited to the recovery of bio-gas or gypsum by-products. Improved waste management, in accordance with the waste hierarchy, will improve energy efficiency, and minimise wasted resources, enhancing our resilience to climate change. The principle of extended producer responsibility is also highly relevant to this section, and this could be incorporated into climate</p>



	change responses as well.
5.9.23	WESSA is hesitant to support waste incineration owing to dioxin pollutants.
6.1	WESSA fully supports the integration of the SA climate change response into all spheres of government and all government policies, strategies, legislation, regulations and plans. WESSA would suggest that the section on government's roles and responsibilities may need further attention. Considering climate change projections and the SA response to the anticipated impacts articulated in the Green Paper, the national situation may become vastly different to what we currently experience, and new ways of doing things will have to be conceived. This includes the role of government.
6.2	Paragraph 4. We would suggest that the business and industrial sectors have an important role to play in improving water efficiency and sustainable waste management (with benefits to our climate change response), as well as increasing levels of energy efficiency.
7	WESSA agrees that this policy should be high-level and interdepartmental. Effective national coordination must be inclusive of all partner groups considered in section 6, "Roles and Responsibilities".
7	Fifth bullet point. WESSA has previously stated its reservations considering carbon trading (see comments on section 5.4.23, above). It is strongly recommended that this section should be expanded to include institutional frameworks for facilitating and mainstreaming Payments for Ecosystem Services.
7	Ongoing public education regarding risks associated with climate change is a responsible objective and one which WESSA supports. This topic, like research and development, is repeatedly mentioned in other sections and the necessity for, and magnitude of, climate change related interventions will likely require dedicated coordination. We would suggest the need for institutional arrangements for the national coordination of capacity building and education, with specific climate change educational strategies being developed for all sectors of the population, from school to decision making level and including both mitigation and adaptation aspects.
7.2	Reconciling FOSAD objectives with some of the Climate change prediction in this document will be a challenge. A reasonable set of expectations for doing so will need to be developed.
7.4	While accepting existing intergovernmental communication procedures, we urge that these are completely transparent and as far as possible include direct citizen participation.



8	While the need for substantial resourcing and support from the international community for the proposed climate change responses is clear, it is strongly recommended that the actions that effect improved management of existing activities, or that generate revenue streams for climate change adaptation and mitigation through fiscal incentives and disincentives, be implemented as early as possible. It is incumbent on every nation on earth to do whatever it can to address the threat without relying on conditionalities which could result in costly delay and inaction.
8.1.2	The development of a National Climate Change Fund is strongly supported.
8.2	WESSA supports the focus on national behaviour change. Reskilling programmes will need to include broad environmental training, and the actions suggested to meet this challenge of human resource development are good.
8.3.1	WESSA supports the suggested actions around a Climate Change Technology Needs Assessment.
9.1.2	This section should include monitoring and research around the changing distribution of indigenous species, as well as providing for monitoring vegetation/habitat and alien invasive species changes.
9.2	WESSA generally supports the Green Paper approach to monitoring, verifying and mitigation.



In conclusion, we once again wish to fully endorse the Department's approach to this Green Paper, and congratulate the Department on addressing this challenge with gravity and insight.

We look forward to the finalisation of the Climate Change Green Paper, and the advancement of South Africa's response to climate change. We encourage the Department to remain open to discussion and dialogue around climate change related issues leading up to COP 17 and beyond.

We wish to acknowledge the continued support of our members, staff and volunteers whose collective knowledge and experience provide the foundation for our work.

Should you have any queries regarding any of the comments raised above, please do not hesitate to contact us.

Yours sincerely,



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