I

(Resolutions, recommendations and opinions)

OPINIONS

EUROPEAN ECONOMIC AND SOCIAL COMMITTEE

452ND PLENARY SESSION HELD ON 24 AND 25 MARCH 2009

Opinion of the European Economic and Social Committee on the role of forests and the forest-based sector in meeting the EU’s climate commitments (Exploratory opinion)
(2009/C 228/01)

On 20 June 2008 the Commission Vice-President Margot WALLSTRÖM wrote to the president of the European Economic and Social Committee, Mr Dimitris DIMITRIADIS, under Article 262 of the Treaty establishing the European Community, to request an exploratory opinion on ‘The role of forests and the forest-based sector in meeting the EU’s climate commitments’ (Exploratory opinion).

The Section for Agriculture, Rural Development and the Environment, which was responsible for preparing the Committee’s work on the subject, adopted its opinion on 3 March 2009. The rapporteur was Mr KALLIO.

At its 452nd plenary session, held on 24 and 25 March 2009 (meeting of 25 March), the European Economic and Social Committee adopted the following opinion by 145 votes to 8 with 14 abstentions.

1. Conclusions and recommendations

1.1 The EESC considers that forests and the renewable wood they produce play a significant role in controlling climate change, because:

— as they grow, forests absorb carbon from the atmosphere and store it in biomass and the soil;

— wood products are a carbon dioxide store – over the period of the store’s lifetime the carbon in it is removed from the atmosphere;

— the use of wood energy reduces reliance on fossil fuels, thereby diminishing greenhouse gas emissions;

— the use of wood products in buildings and furniture indirectly reduces fossil fuel emissions as it replaces other materials such as concrete, whose manufacture consumes more energy and produces more emissions than using wood.

1.2 The EESC notes that wood is used in Europe mainly in construction, as an energy source, for making furniture and in the production of paper. Thanks to the knock-on effects of the processing chain, wood products bring great added value in terms of employment, forest owners’ income and economic activity, particularly in rural areas.

1.3 The EESC highlights the fact that, for several decades now, European forests have been functioning as carbon sinks because their annual growth has exceeded fellings, thus helping to slow the build-up of carbon dioxide in the atmosphere. The importance of natural forests as carbon stores and as preserves of biodiversity must be ensured. Sustainable forest management in European countries is monitored using MCPFE (1) criteria and indicators which are constantly being developed.

(1) MCPFE=Ministerial Conference on the protection of Forest in Europe since 1990.
1.4 The EESC proposes that the EU take the following measures:

— endeavour to use wood in different ways and for different purposes, by promoting, for example, the use of sustainably produced forest bio-energy, increasing information about using wood in construction on the basis of life cycle calculations and common construction standards and by the Member States making wood construction part of their national timber procurement policy;

— to be more active than at present in international forestry policy and to take the lead in promoting sustainably managed forests worldwide;

— to set up a European committee of leading experts made up of representatives from the forestry industry, those framing forestry policy, researchers, forest owners and other key forestry, environmental and climate protection players. Its brief will be to enhance and widen the scope of dialogue on forestry issues and improve the transfer of know-how and decision-making;

— to make every effort to meet the requirements for greenhouse gas reporting in the post-Kyoto period in the following ways:

a) acceptance and inclusion of carbon stored in sustainably manufactured wood products as a mandatory instrument in carbon balance calculations;

b) development of a REDD instrument (1) as an effective carbon trading tool and its acceptance in carbon balance calculations of land-use changes, particularly with a view to preventing forest loss in developing countries.

— to support research, inventories of forest reserves, the mapping of risk areas susceptible to the effects of climate change and the development of systems for monitoring the condition of forests and to ensure funding for these.

1.5 The EESC emphasises that, in the face of the potential negative effects of climate change, EU Member States should develop forest management contingency plans for the prevention of forest damage caused by extreme phenomena (storms, drought, forest fires, damage by insects) and for remedying the effects of such damage, in addition to increasing information about the importance of forest management.

1.6 The EESC recommends that EU Member States also develop dispersed bioenergy production with the aid of feed-in tariffs.

1.7 The EESC emphasises that in addition to their significance for climate change, forests perform many other important ecological, social and economic functions, which need to be safeguarded. Apart from the production of wood, forestry goals include maintaining forest biodiversity, management of groundwater resources, landscape management, use of forests for recreational purposes and tourism, serving as a traffic noise barrier, prevention of avalanches and erosion and providing non-wood goods such as berries, mushrooms and game. Although forests contribute to well-being in many ways, none of these additional functions is reflected in profitability calculations or in timber prices.

2. EU climate commitments with relevance for forest and forestry

2.1 In December 2008 the European Parliament approved the EU climate and energy package. The legislative decisions which affect forests and forestry are as follows:

— Revision of the EU Emissions Trading Directive. The directive sets out guidelines concerning land use, land-use changes and forestry for greenhouse gas reporting and emissions trading. The carbon stored in wood products and in forests themselves form an important part of greenhouse gas reporting.

— The chemical wood pulp and paper industry is covered by the emissions trading scheme, but the sector fulfils the criteria on the basis of which it can be considered to belong to the ‘carbon leakage’ sector. Decisions concerning this sector will be taken later. The use of wood as a raw material compared to the manufacture of most other building materials (concrete, steel and aluminium) is covered by emissions trading, so that price of carbon affects their competitiveness. This confers an indirect advantage on wood materials and on wood construction.

— Framework Directive for Renewable Energy (RED). The target of achieving a 20 % renewable energy share by 2020 implies the need for a considerable increase in forest bioenergy (heating, electricity and biofuels). In order to step up the exploitation of the potential of biomass, the directive (section 34) sets the goal of making greater use of existing wood resources and the development of new forest management methods. The directive contains numerous

(1) REDD=Reduction Emissions from Deforestation and Forest Degradation.
goals regarding sustainably produced forest biomass and the construction sector. The aim is to save energy and reduce emissions in the manufacture of materials.

— Transport Fuels Directive. The directive sets out requirements concerning sustainably produced biomass (including as a default value also forest biomasses) in the manufacture of biofuels in accordance with the RED Directives strategic framework.

2.2 Forests cover 31% of Europe’s land area and it is estimated that they sequester approx. 10% of Europe’s annual carbon dioxide emissions\(^\text{2}\). The amount of carbon emitted into the atmosphere in sustainably managed forests is smaller (carbon sink) than or equal to (carbon neutral) the amount of carbon sequestered from the atmosphere by forests.

3. Forest resources\(^\text{3}\) and their use in Europe

3.1 There are 156 million hectares of forest land in the EU-27. However, owing to natural conditions not all the forest area is available for harvesting timber and commercial use. It is estimated that an average of 80-90% of this area is accessible, but in eastern Europe this type of accessible forest area is often only 40-50%. During the past 15 years the forest area has grown in the territory of the EU-27 by about 10 million hectares as a result of afforestation, reforestation of former agricultural land and natural reforestation. The increase in forest area is equivalent in size to the total land area of Hungary.

3.2 About 60% of forests in the EU-27 are privately owned, mainly by families, and 40% are publicly owned, e.g. by the state, municipalities, religious communities and other entities. There is a total of more than 15 million private forest owners, and this number is growing as a result of restructuring of forest ownership in the eastern European countries, as well as various arrangements related to the division of inheritances.

3.3 For centuries people have exploited Europe’s forests in various ways, changing their structure. Indeed, Europe’s forests have been transformed by human action, so they are described as ‘semi-natural’ forests. 85% of forests are of the ‘semi-natural’ type. In addition to this type of forest, forestry is also practised in plantation forests. Plantation forest, found mainly in south-western Europe, represents about 8% of Europe’s forest land. Natural forests\(^\text{3}\), undisturbed by man, (forest and other wooded land which are not subject to forestry activities), which are found mainly in eastern Europe, the Baltic countries and the Nordic countries, cover about 5% of the forest area.

3.4 Natural forests and protected forest areas are the most important category of forest for safeguarding biodiversity. Natural forests are also stable ecosystems which help to combat the effects of climate change. Some 8% of Europe’s forested area is protected for the purpose of biodiversity, and around 10% is protected on grounds of landscape conservation, making a total of 18% (or 34 million hectares). The number of areas protected by law or other regulations has increased in recent years. The rarest and most precious forests suitable for protection are for the most part already protected in Europe. Protected forest is often located in upland areas or far from habitation, which are some of the most valuable areas – untouched by human activity – in terms of the diversity of species found there. In addition, about 10% of forests are protected so as to protect water systems, groundwater resources and soil, and to prevent the occurrence of avalanches or erosion. Biodiversity is also promoted in the context of managing commercial forest by leaving decayed trees in the forest and micro-organism habitats in order to preserve rare species.

3.5 Commercial forest growth exceeds fellings by a considerable margin in Europe. The stock of standing timber grew by 687 million m\(^3\) in net terms in the EU-27 in 2005 (in forests where natural conditions allow wood to be harvested). Correspondingly, logging amounted to 442 million m\(^3\). This means that the forest utilisation rate, or ratio of felling to growth, was about 60% on average (ranging from 30 to 80%). The forest utilisation rate was over 50% in the northern Member States and central Europe, but less than 50% in southern and south-eastern Europe. The forest utilisation rate has increased over the last 10 years, but has not

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yet reached the same level as it was in 1990. Felling increased to some extent owing to severe storms in the first decade of the new millennium, which meant that in some places timber was harvested in a short time, with felling levels equal to those over several normal years. In 2006, imports of round wood, wood chips and waste wood to Europe (EU-27) amounted to 8.3 million cubic metres (not including paper and pulp) while exports to countries outside Europe totalled 54 million cubic metres (1).

3.6 Nearly 40% (or some 250 million m³) of forest growth in existing commercial forests is unused owing to the fact that fellings are less than growth. The forest stock of the EU-27 has also been growing constantly over the past 50 years. The total volume of standing timber is around 30 billion m³, which is equivalent to 9.8 billion tonnes of carbon. Part of the carbon sequestered by trees is stored in the soil but because of the lack of research there is no Europe-wide estimate for the soil's share of sequestered carbon. There is an important difference between commercial forests and natural forests in terms of carbon sequestration: from the perspective of climate protection, natural woods in their ‘end state’ are pure carbon sinks, in which carbon sequestration through the growth of biomass and carbon release through the decay of biomass are in equilibrium, whereas commercial forests are constantly developing new and additional carbon sequestration capacity due to the harvesting of timber. However, the EESC would like to make it quite clear does it not consider commercially managed forests to be therefore more valuable than natural forests.

3.7 It is important to examine the potential of Europe's forests for harvesting and other uses so as to understand and evaluate carbon-sequestration, the production of forest bioenergy, and the carbon cycle related to timber products. There is currently no coherent picture of felling potential for the EU-27 as a whole. Several countries have national forestry programmes that set out various felling possibilities taking forest protection needs, biodiversity and other multifunctional needs into account.

4. The impact of climate change on forests

4.1 Forests absorb carbon dioxide (CO₂) from the atmosphere by assimilation and convert it to biomass, primarily in the form of wood, while releasing oxygen, which is vital for the survival of animals and human beings. Climate change, especially the increase in the amount of greenhouse gases in the atmosphere and rising temperatures, but also the amount of ozone on the earth's surface, nitrogen deposits and acidification of the soil, poses a threat – either immediately or after a time lag – to the health, growth and structure of forests.

4.2 Climate change affects forests in two ways. If the climate gradually becomes warmer or drier, for example, trees have to adjust to the change. This adjustment is gradual, and its progress and measures influencing it can be planned. The most serious immediate threats to the development of forests come from extreme weather phenomena. Time series compiled since 1850 show a clear increase in storm damage during the last 20 years in Europe. Similarly, forest fires have occurred in abundance over the last decade in the Mediterranean countries. It is impossible to precisely predict the occurrence of extreme weather phenomena, but it is possible to prepare for them using forward planning.

4.3 If existing commercial forests do not adapt sufficiently to a gradual change in climate, the results will be among other things a weakening in the vitality of trees, a decrease in productivity, death of individual trees, reduced ability of trees to compete and a consequent increase in the occurrence of diseases and pests, as well as a change in the distribution of tree species occurring in forests. There is also a risk that trees will not adapt in northern regions, because their rate of growth is changing as a result of the increasing length of the growing season and the fact that they are not adjusting sufficiently to the dormant or winter season. In the event of extreme weather phenomena such as drought, forest fires, storms or snow damage, trees may die across wide areas, reforestation may be prevented and dead tree matter may cause mass propagation of forest pests, also in surrounding healthy forests.

4.4 Climate change affects different vegetation zones in different ways. The main effects in various vegetation zones and countries (northern areas, temperate zone, Mediterranean vegetation zone and alpine and polar areas) are expected to be as follows:

— in the Mediterranean region it is likely that dry, hot periods will increase, resulting in a shortage of fresh water and an increased risk of forest fires and desertification;

— in central Europe the growing season will become longer; forest growth may increase; the proportion of broadleaved trees is likely to grow; rainfall amounts may decline and drought occur; climatic extremes, notably storm damage, will become more prevalent;

— the growing season in the northern coniferous zone is likely to lengthen; forest growth may increase; storm damage will become more prevalent; and in the temperate zone insect pests are expected to spread northwards, possible causing damage on a massive scale.

A consequence of climate change could be an upwards or northwards shift in the tree-line zone and the gradual extinction of certain species in forests in alpine and tree-line areas in northern and polar regions.

5. **The role of forest management in adapting to climate change**

5.1 Good forest management is the main way of improving the ability of forests to adapt to climate change. Preventative measures such as the timely recognition and removal of dying trees and keeping material that could cause forest fires down to a minimum are part of forest management. Awareness of the importance of forest management in adapting to climate change must be increased among members of the public, forest owners and those responsible for forest management. Most of the EU’s forests are managed on an ongoing basis with the result that they generally have high productivity and viability. Potential adaptation measures must be taken now and on a continuing basis since long-term thinking is required in forestry given that life-cycles are typically 15-150 years.

5.2 With regard to forest re-generation, the tree species best suited to a certain locality must be planted there. Native species should be favoured as tree species that are native to a particular locality are better suited to adapting to local climate change because of their genetic make-up. Mixed forest should also be favoured, as the presence of various types of trees with different properties reduces the risks to forests.

5.3 In single species coniferous forests established outside their natural growing area, efforts should be made to alter the composition of the forest to resemble the original distribution of tree species. Planted, single species forests often have lower resistance than mixed forests to storms and the insect damage that frequently comes in their wake.

5.4 Forest management contingency plans, funding options for covering any damage and operational models must be drawn up so that the industry is prepared for the detrimental effects of sudden and extreme weather caused by climate change and the damage it causes to forests. Areas that are particularly at risk from such extreme weather conditions must be mapped out. Operational models also need to be drawn up for dealing with sudden increases in timber felling and for ensuring the smooth functioning of timber markets.

5.5 Climate change and international trade in plant materials increase the spread of alien species and plant pests. The EU's Plant Protection Directive contains provisions on the control of damaging plant pests, on preventing the spread of parasites and on requirements relating to the international trade in timber and seedlings. To prevent the spread of the most harmful wood pests (e.g. the pine wood nematode) and maintain the health of the forests, the EU area needs plant protection regulations that are sufficiently strict as well as effective monitoring. National strategies and programmes are needed to combat invasive alien species.

5.6 Managing forests does not have to contradict biodiversity aims. Biodiversity should be taken into account in the management of semi-natural commercial forests by leaving decayed wood and undisturbed micro-biotopes in commercial stands in order to preserve living organisms. Several EU Member States give financial support to private owners of woods who undertake to protect them voluntarily, as a measure to promote biodiversity. Forest certification schemes also require that forest biodiversity criteria are taken into account in forest management.

5.7 At present, Europe's commercial forests contain a large amount of standing or fallen decayed wood which acts as a carbon store and which also provides a necessary living environment for living organisms. The average amount of decayed wood is 10m³/ha. The presence of large amounts of decaying wood can encourage a mass spread of wood pests or large forest fires. The biodiversity advantages are nonetheless considerable and it is therefore important that decaying wood already in the forests is not removed from where it once grew, for example, for burning as fuel.

5.8 Natural forest and protected areas are necessary for preserving biodiversity. With regard to carbon sequestration, natural forest alters over its lifecycle from acting as a carbon sink to becoming a carbon store. Thus, shifting forests away from being actively managed to being fully-protected reduces the surface area suitable for stands of growing trees which can increase the amount of carbon stored in forests and, in particular, provide a source of wood products which compensate for other forms of energy and other materials.

5.9 Integrated protection (decayed wood and small biotopes) in the context of commercial forest management is more effective than comprehensive forest protection in combating climate change.

6. **The role of wood products in mitigating climate change**

6.1 Forests influence climate change during the growing and processing chain in four ways:

- as they grow, forests absorb carbon from the atmosphere and store it in both biomass and the soil;
— wood products are a carbon dioxide store;
— using wood for energy production reduces reliance on fossil fuels, therefore diminishing greenhouse gas emissions;
— the use of wood products in buildings and for furniture, inter alia, indirectly reduces fossil fuel emissions when wood is used as a substitute for other materials such as concrete whose manufacture uses more energy and produces more emissions than wood.

6.2 For several decades now European forests have been functioning as carbon sinks and, because of reduced fellings in relation to net annual growth have slowed the build-up of carbon dioxide in the atmosphere. Commercial forests cannot continue this indefinitely because as the growth rate passes its peak the forest ceases to store carbon. Commercial forests must therefore be managed on a continuous basis.

6.3 The compensating effects of using harvested wood products (HWP) are important in mitigating climate change. Carbon is locked into the forest wood from the atmosphere and is then transferred and sequestered in wood products like paper, furniture, boards and wooden buildings and is removed from the atmosphere, for example, in the form of a wooden house, for up to several centuries. At the end of the life cycle, wood products can be recycled and burned to produce energy. Carbon reporting on wood products remains voluntary in the Kyoto Treaty’s greenhouse gas calculations and as yet remains incomplete, partly because international trade is taken into account.

6.4 Current databases, both national and international, make it possible to calculate the carbon-sequestration capacity of wood products. Rules on calculation are being developed, with the aim of using them for forest carbon balance calculations. The EU should submit a proposal to the Copenhagen Climate Conference in 2009 that reporting on the amount of carbon stored in wood products be included as a mandatory part of carbon balance calculations in the post-Kyoto period from 2012 onwards.

6.5 Including the carbon sequestration capacity of wood products in carbon balance calculations could provide the forestry industry with an additional incentive to manage forests in an environmentally-friendly and efficient way. Continuous management of the forests is of major significance for preserving the viability of forests in the face of the harmful effects of climate change.

7. Use of wood for construction

7.1 The construction sector has a very important role to play in tackling climate change, as 40-50 % of the world’s primary energy is used in the heating and cooling of buildings. It is estimated that almost 40 % of CO₂ emissions derive from the manufacture of construction materials, construction activity and the use of buildings.

In 2005, total energy consumption in the EU-27 was 1 170,2 Mtoe. The share of industry in this was 28 %, compared to 30,9 % for transport and 41.1 % for domestic use. The heating and cooling of buildings is responsible for 8 % of CO₂ emissions and a significant proportion of such emissions can be avoided through professional construction and new techniques as well as by increasing the share of wood used in construction.

7.2 Wood is a low-energy, renewable and carbon-neutral building material throughout its entire life-cycle. No other common building material requires as little energy to produce as wood does. Using one cubic metre of wood as a substitute for other building materials reduces CO₂ emissions in the atmosphere by an average of 1.1 tonnes.

7.3 The more widespread construction of wooden buildings worldwide and the use of wood in construction are limited by the lack of uniform standards, rules and certification criteria. The construction sector should have at its disposal analyses of the life-cycle and greenhouse gas emissions of products, based on scientific calculations, so that it could compare various materials on an impartial basis. Member State governments should incorporate ‘green construction’ timber materials into timber supply policy and apply forest certification requirements that are compatible with the international concept of sustainability on a more widespread basis.

8. Forest bioenergy

8.1 Forest biomass is the most important immediately accessible renewable bioenergy resource in Europe and is used as energy in three ways:
— for the production of heat and industrial steam;
— for electricity generation;
— as a transport biofuel.

(1) Harvested wood products (HWP) comprises all wood material (including bark) which leaves harvest sites. Slash and other material left at harvest sites are regarded as dead organic matter and not HWP (IPCC 2006 guidelines).

The production of heat and electricity and combined production of heat and electricity from forest biomass have seen a rapid increase in Europe over recent years. Heat and electricity are produced for individual detached houses and in heating or heating and electricity plants of various sizes for schools, public operators, hospitals, village communities or cities. The technologies for producing biofuels from forest biomass and wood raw material are still in the trial and development stage and further investment is required. Biomass pyrolysis which produces charcoal suitable for use as soil improvement material is a new opportunity to improve wood energy values and the soil’s effectiveness as a carbon sink.

8.2 In 2006 the EU-25 produced energy from renewable energy resources amounting to 110 Mtoe, which is about 14 % of total energy use (Eurostat 2008). The major part (65 %) of renewable energy was produced from biomass, mainly (60 %) forest energy. The share of forest energy in total energy use varies very widely across EU-27 countries.

8.3 Wood-based biofuels obtainable from forests include forest chips of various kinds, wood billets, pellets, briquettes, stump and root wood, charcoal, wood gas and fast-growing energy tree species such as willow. Forest industry by-products (industrial waste liquors and waste wood such as black liquor, bark, sawdust and process waste and recycled wood) offer great energy potential and are used in the production of heat and energy, particularly in the integrated forest industry. Use of by-products and recovered wood for energy purposes could amount to 30-50 % of roundwood use.

8.4 There is scope in Europe for a considerable expansion in the use of forest bioenergy from the current level. Preliminary estimates put the forest biomass harvesting potential of Europe at 100-200 million cubic metres a year, with the proviso that harvesting does not pose a threat to the environment, forest biodiversity and conservation areas. At present, the amount of forest biomass harvested separately and in connection with the harvesting of stemwood is estimated to be some 10–15 % of the harvesting potential.

8.5 Increased use of forest biomass creates new opportunities not only for forest owners by opening the way to a wider timber market and price competition but also for the sawmill industry by offering a larger market for its by-products. Good demand for forest biomass could give rise to changes in the roundwood market, by leading to increased competition for wood raw materials between the bioenergy sector and industries using stemwood. End-use support, i.e. feed-in tariffs for the production of ‘green energy’, is an important instrument for developing various kinds of bioenergy strategies at both local and regional level. Support for EU regional development should continue to be a key consideration in increasing the use of bioenergy.

8.6 Markets for woodfuels and especially firewood are chiefly local but increased use of wood for energy purposes in the EU would substantially boost the level of business and jobs in the market for machinery and equipment. Special machinery and equipment are needed to produce pellets, briquettes and other processed woodfuels. Energy production requires a large number of boilers and other high-value equipment that offer major growth potential. Increased use of wood energy would also open up major opportunities for exporting technology to markets outside the EU.

8.7 Work on drawing up standards for sustainable biomass production is underway in connection with the EU framework directive on renewable energy. Standards are important for ensuring sustainable procurement and production of forest bioenergy and guaranteeing common procedures. Standards for sustainably produced forest biomass must be linked to the Europe-wide MCPFE criteria so as to avoid unnecessary work and duplication.

9. Forest policy aspects

9.1 Establishing new forests through planting is one of the most effective ways of removing carbon from the atmosphere. The EU should support forest planting projects in the developing countries as part of its development policy as climate change will in all likelihood lead to growing economic disparities between industrial countries and the developing world. Planting projects should be accompanied by adaptation strategies which support capacity-building, the multi-functional use of forests and good governance in developing countries. The EU should also make efforts to prevent illegal logging in the developing countries, to promote sustainable forestry and to assist developing countries in the drafting of their national forestry programmes in conjunction with other sectors.
9.2 The Kyoto Protocol’s carbon balance calculations reflecting land-use change do not contain provisions for the developing countries which allow for the reduction in carbon dioxide emissions resulting from the prevention of forest loss to be taken into account. As loss of forests increases carbon dioxide emissions, the EU should support the development and adoption of the so-called REDD-instrument so that it may be used in the calculation of land-use greenhouse gases in the post-Kyoto period from 2012 onwards. This requires the setting of a price which reflects the value of accumulated carbon, so that the Member States may use emissions trading to exercise some influence in preventing tropical forest loss.

9.3 The EU has developed the so-called FLEGT procedure (1) which aims to prevent the sale on EU markets of illegally felled timber and derived products. By means of a country specific partnership system, the FLEGT licensing system promotes and supports sustainable forest management in developing countries and encourages Member States and developing countries to work more closely. The EU should support the further development of the FLEGT system and its expansion worldwide.


The President
of the European Economic and Social Committee
Mario SEPPI


(2) PEFC= Programme for the endorsement of Forest Certification schemes; www.pefc.org

(3) FSC= Forest Stewardship Council.