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SUSTAINABLE DEVELOPMENT IN THE YUKON

Submission to Yukon 2000

by the

Yukon Conservation Society

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PREFACE

The Yukon 2000 Economic Planning Project is a far-sighted government planning strategy. Bringing together a plethora of high-quality research papers and personal testimony on the future of the Yukon economy, the project is at the very cutting edge of economic planning for the next century. By its very nature, the Yukon 2000 process is, for the first time in the Yukon's history, attempting to integrate economic development with resource conservation to ensure that our development is sustainable.

Since its inception in 1968, the Yukon Conservation Society has promoted the integration of conservation and development. Originally proposed as the 'conservation society', the tenets of integrated conservation and resource planning have most recently been advocated in the World Conservation Strategy (1980). Prepared by five international non-government organizations, the World Conservation Strategy states "human beings, in their quest for economic development and enjoyment of the riches of nature, must come to terms with the reality of resource limitation and the carrying capacity of ecosystems, and must take account of the needs of future generations. This is the message of conservation" (IUCN 1980). So too is the message of the Yukon Conservation Society.

The purpose of this paper is to develop and apply a 'sustainable development' perspective to the Yukon Development Strategy. In doing so, the paper will also comment on the related natural resources papers prepared for the Yukon 2000 Economic Development Strategy. The terms of reference for this discussion paper are stated to be:

- i) to discuss the importance of linking economic development to conservation;
- ii) highlight the relationship of economics to the environment; and,
- iii) provide comment on the Natural Resources Strategy component of Yukon 2000.

INTRODUCTION

Throughout recent industrial history, the Western society has attempted to compartmentalize its activities. Every individual has become specialized; an engineer, a doctor, a daycare worker. This reductionist approach seemed to make our world easier to understand and gave everyone a particular purpose and role in society. However, the reductionist approach may ultimately lead to our demise.

Until recently, the planet was viewed as a large world in which human activities and their effects were neatly compartmentalized within nations, within sectors and professions. Due to an increasing number of global crises, however, we are abruptly becoming aware of global interdependence and the limits of our planet. No longer can specialized technological solutions be relied on to solve our problems; indeed many of these past solutions have led to the creation of our present global environmental problems. All of our activities, personal and commercial must be designed within the limitations of our planet and with the full acceptance of our responsibilities to present and future generations.

As noted in the recently released World Commission on Environment and Development (1987), many present efforts to guard and maintain human progress, to meet human needs, and to realize human ambitions are simply unsustainable. They draw too heavily, too quickly, on already overdrawn environmental resource accounts to be affordable far into the future without bankrupting these accounts. Although our present balance sheets may appear positive, "our children will inherit the losses. We borrow environmental capital from future generations with no intention or prospect of repaying" (Brundtland et al 1987). We must begin now to make the institutional and lifestyle changes required to ensure that options for future generations are not closed due to our recklessness.

Although the Yukon can be viewed as still being in its infancy regarding economic development and resource conservation, it is imperative that future planning strategies be built upon the foundations of sustainable development. Many of the tenets of sustainable development (see Appendix I) have been echoed throughout the Yukon 2000 planning and consultation process and they are re-affirmed through the seven goals outlined in the Yukon Development Strategy Public Discussion Paper (1987). These goals are:

- i) the option to stay in the Yukon;
- ii) taking control of the future;
- iii) achieving an acceptable quality of life;
- iv) achieving equality;
- v) increased job opportunities;
- vi) diversification of the economy; and
- vii) increased participation in decision-making.

Fulfilling these goals will clearly not be an easy task. Changes will need to be made to our management and decision-making processes as government, private enterprise and the public begin to incorporate the aims of sustainable development by meeting the needs and aspirations of the present without compromising the ability to meet those of the future.

This paper outlines the critical relationship between economic development and resource conservation in the Yukon by illustrating the role and importance of incorporating sustainable development concepts into the Yukon Development Strategy. The paper begins by analyzing the current Yukon situation vis-a-vis the economy and society in light of important variables for sustainable development. The report then applies the sustainable development approach considering useful programs and institutions in several resource sectors. As part of the analysis, the paper comments on proposed strategies set out in other Yukon 2000 documents, especially those contained in the Natural Resources Draft Economic Environment Discussion Paper (1987).

THE YUKON SITUATION

Many papers submitted as part of the Yukon 2000 planning process provide details and insights about the nature of the Yukon economy, society and political institutions. While these papers will not be repeated here, the Yukon economic and political situation will briefly be characterized from a sustainable development perspective to illustrate in what areas ecology and environmental planning should be more fully integrated into our economic planning processes.

It has been recognized throughout the Yukon 2000 process that the Yukon has both formal and informal components. The interaction and integration of these two economies is critical to developing a sustainable economy in the Yukon that will fully recognize the needs and aspirations of all Yukon residents.

The informal economy of the territory is not unlike the rural economy of many other young countries. At a workshop on sustainable development, held recently in Nairobi, Kenya, the rural economy was defined in terms of environment and development.

The rural economy means agricultural economy, they said. The main inputs to agriculture are land, water, livestock, labour and the knowledge which people have gained over hundreds of years. The rural economy was formerly self-sustained and self-reliant. However, due to the modernization brought about by urban and foreign interests, a vast majority of the rural population have lost control over the means of agricultural production, including their own labour. Self-reliance has been lost to poverty and unemployment (Anonymous 1985).

For the Yukon, one need only change the words 'agriculture' to 'subsistence' and 'livestock' to 'wildlife' and the description would be almost exact for the traditional native Yukon economy.

The loss and dismantling of the rural-subsistence Yukon economy has been due to the 'development' of urban and foreign cash-based economy. 'Development', often, has not been an intentional process of improving the welfare of the inhabitants, but a side-effect of resource exploitation. In particular, the evolving shape of the Yukon economy and ecology has been very much a side-effect of resource extraction projects beginning with the Gold Rush of 1898 through to current national energy and resource projects. The dominant development ideology has been that of the 'trickle-down effect' where local 'development' trickles down from the capital investment in resource extraction.

In the Yukon, this has been supplemented with a large government bureaucracy and transfer payments which have grown up around managing this economy as well as administering to a native population made newly-dependent by the process of 'modernization'.

The dependent character of the dominant 'industrial' economy of the territory was set out in a recent Yukon 2000 submission:

The resource extraction industries make up a much higher proportion of the total value of production, while the manufacturing and processing industries make up a much smaller proportion. Similarly with transportation. Aside from the small business sector, there is a high degree of concentration of outside or external ownership. Financial and investment institutions are owned and controlled by corporations with head offices in Central Canada, with the result that investment opportunities do not receive the same attention and the same support as in Central Canada (McArthur 1986).

In general, as has frequently been noted, the formal Yukon economy is thus based largely on externally-controlled primary industry with a related service sector (see Pell and Wismer 1987). This has recently been supplemented by a more vital small business sector which serves government needs and personnel, and a growing tourist sector.

The formal, resource extraction-based cash economy is, however, highly unstable. Being dependent on the export of raw materials, the Yukon is a typical 'commodities' supplier, highly susceptible to every rise and fall in a foreign market in which it has very little power. Additionally, as the dominant industrial economy of the Yukon is also so specialized and undiversified, it actually may be incapable of even benefiting from periods of market boom. As stated by Bill Rees (1986),

There are many unoccupied economic niches and the

existing network of input/output linkages is too frail to capture much of the new investment. Local firms, especially early in a boom, simply cannot offer the products, capacity or services required by large-scale industrial activity. Industry, therefore, makes the bulk of its major purchases outside the region. From the perspective of the permanent community, this represents a massive leakage of capital that otherwise might be invested in new economic activity in the north.

Similarly, since the unspecialized skills of residents are only useful for low-end jobs, the northward migration of investment is accompanied by the northward migration of highly-skilled workers ...

Despite the recognized instability and limited long-term benefits accruing to Yukon residents, government agencies frequently expend a large number of financial and human resources to keep the resource extraction economy actively 'afloat'. In contrast, very little attention is directed to the importance of the informal, non-market economy which continues to exist side-by-side with the new industrial economy.

As in other regions of the world, the differences between the two economies can be seen in terms of urban-rural, elite-nonelite, white-native, 'core'-'periphery', or many other dichotomies. Most importantly, however, this difference exists in economic terms. As stated by socio-economist, Peter Usher (1987):

The village economy is the equivalent of the traditional rural economy of southern Canada, except that the basic resource is wildlife rather than agricultural land. The economy of the urbanized regional and non-renewable resource centres is based almost entirely on steady employment and wage and salary income whereas the economy of the villages is based on a mixture of wage employment (often seasonal), commodity production (sale of furs, fish and handicrafts) and domestic production (country food, firewood, etc.).

... taxable income (i.e. wages, commercial activity and some transfer payments) was about eight times greater in the 19 major administrative, commercial and resource centres than in the 63 other communities combined.

This other economy, in addition to being a more directly 'natural' economy, is also much less involved in the use of cash. This is a barter, direct trade, often volunteer 'informal' economy and it is very similar to the 'subsistence' crop economy that is also being displaced in other parts of the world. By being much more diverse than the single resource project it is, as Rees states, a more stable and less disruptive economy -- a

truly 'mixed' economy that also lives more lightly on the land:

[C]ontrary to southern perceptions, it is actually a sophisticated cultural adaptation to a hostile and unpredictable environment, both ecological and economic. In the face of enormous change, this modern derivative of the original socio-economic system of the North has proved remarkably robust and persistent (Rees 1986).

In addition to the economic structure, the political and legislative structure in the Yukon must also be considered in the context of sustainable development in terms of the degree to which local resource use is/is not locally controlled. As noted for the formal economy of the territory, much of the control is external to the Yukon. A similar situation occurs with political control. The territory has been limited in what it can achieve because the federal government's jurisdiction over the land base and resources. At the same time, communities are also frequently limited in their activities by the territorial government which is distantly located. In both instances, direct public participation and involvement in decision-making is limited.

Given the extent of the dependence of the formal economy on resource extraction, particularly mining, and the federal government's high degree of involvement in all aspects of the Yukon's economy and management regime, and the limited carrying capacity of the environment, the sustainable development option is not an easy one. Nonetheless, with the strong foundation of native communities and cultures, a strong renewable resource base, and a small population that wishes to take greater control of its economy and quality of life, the sustainable development option is eminently viable. Very few, if any, nations or regions are given a similar opportunity and quite likely, the possibility to create and charter a desirable future will not come again.

A STRATEGIC PLAN FOR SUSTAINABLE DEVELOPMENT

Many papers submitted for consideration in the Yukon Development Strategy process contain specific suggestions for environmental and resource management. As well, many papers (eg. Prescott-Allen and Prescott-Allen 1987) have advocated land use planning as a means of allocating resources and resolving potential conflicts. While these efforts should be supported, it is questionable whether such a system can be implemented without supporting institutional changes to our current economic and management regimes. Additionally, planning, on the scale recommended (see Prescott-Allen and Prescott-Allen 1987) will inevitably be a lengthy process; a process which Yukon history has shown will not be implemented quickly. Consequently, the following section has been prepared to outline some strategic principles and institutional changes that would facilitate the structural changes required to quickly lead to a sustainable conservation-oriented development strategy for the Yukon.

The strategic planning principles can be grouped into three categories, the political, economic and resource management. Each of these will be discussed separately below.

1. Political Institutions - Following are some basic principles and related political institutions that could enhance Yukon.

i) Decentralize political power: This is the most basic guiding principle for sustainable development - the decentralization of real power and authority to allow for meaningful participation and control at the community level. Many situations of non-sustainability are the result of allowing non-local interests to assert control over a large segment of the resource base. Through native land settlements, devolution of federal power and the resulting reform of territorial institutions, a primary goal should be to create a community veto over resource proposals in local regions. The requisite legislation should be put in place and co-ordinated management which transcends local issues should be provided by the Yukon Territorial Government.

ii) Democratize political power: In addition to strengthening local authority, decision-making at the community and territorial levels should be made open through a legally-mandated process of broad public participation. Such legislation could be aimed, especially at the territorial level, to encourage non-governmental organizations, which can be useful as a quasi-private sector vehicle for such tasks as providing information for decision-making, expression of popular sentiments, acting as a counter-balance to commercial interests, delivering many services and so on. This process can be implemented through a variety of public participation legislative initiatives. At the community level, the democratization of power should be encouraged through legislatively-supported community planning processes.

The importance of these two initiatives must be stressed. In many of the papers and reports associated with the Yukon 2000 process, general principles have been elucidated concerning the need to develop planning processes for developing a comprehensive economic plan, setting priorities, resolving resource allocation conflicts, harmonizing competing interests and so on. These are useful planning principles, but they take place within a structure of political power. Clearly the community consultation undertaken during the Yukon 2000 process has demonstrated that the public wants to be directly involved. An appropriate political structure that facilitates public involvement is of primary concern because, without a re-orientation of power, planning will not significantly change the development pattern.

Additional politically-related principles include the following:

iii) Facilitate comprehensive planning, within the

communities, Yukon-wide: Based upon the final Yukon Development Strategy, the Yukon Territorial Government should assist in the creation of comprehensive, local development plans. The Yukon Development Strategy should be revised following the completion of the local, community plans.

iv) Address social needs first: As a priority for sustainable development, any planning undertaken should aim, as a matter of priority, to create the possibility of 'sustainable livelihood'.

v) Establish general environmental resource standards: While resource management functions should be decentralized in accordance with community decision-making, the territorial government should retain the authority to set minimum environmental standards for both commercial and subsistence activities. By retaining this standard-setting power, a dynamic management balance between the communities and the territorial government will be put in place and will permit both the highest and the most sustainable use of the area's resources.

vi) Legislate corporate codes of conduct: For commercial activities operating in the Yukon, government-mandated 'codes of conduct' should be applied. This code should address social needs, environmental standards and capital/investment criteria. These should be standardized as much as possible at the territorial level to provide a clear, stable climate for investment. The territorial government must balance the implementation of stricter social and environmental standards on industrial activity, with the need to attract capital investment and preventing capital flight.

vii) Orient devolution and on-going federal programs to support sustainable development: In conjunction with the native population, the territorial government should seek to ensure that federal programs, and the process of devolution in general, are supportive of sustainable development needs. Legislation, such as the Yukon Placer Mining Act and the Quartz Act, should be updated to reflect the tenets and goals of sustainable development.

vii) Co-ordinate with other northern governments: The territorial government should co-ordinate with other northern countries in search of models or precedents for legislation, management strategies, appropriate technologies, and production technologies amongst other things. This is an important function for the territorial government which could have varied economic and political benefits.

2. Economic Institutions - The following are some proposed economic principles and corresponding institutions for sustainable development.

i) Improve economic accounting: It is proposed that the

territorial government develop a new set of economic accounts including a social welfare account and a physically-based environmental welfare account. Considering how these indicators affect perceptions of performance, their usefulness is as an educational as well as managerial tool.

ii) Broaden economic assessments: The government should draft a new standard procedure for undertaking such analyses. This procedure should reflect recent evaluation techniques such as life-cycle costing, full environmental and social accounting, contingent valuation, and non-monetary quantitative evaluations amongst others.

iii) Protect and foster the community economy: Economic development in the Yukon context means supporting an indigenous economic model and structure. The need to strengthen the local economy in a northern context has been an overwhelming theme in the papers and debate elicited by the Yukon 2000 project to date. In this regard, a number of sub-themes might be highlighted:

a) The primary reference point for the success of the economic strategy should be meeting social needs and ensuring that all residents enjoy an improved standard of living. Culture, and quality of life, should be the development template such that economic development serves to reinforce the local culture of both natives and permanent residents.

b) The direction of economic development should be to achieve a better balance between external and territorial economies. Greater attention should be given to using external trade to benefit the Yukon (rather than vice versa) and to developing the community economy as a replacement for much externally-related economic activity. This is a matter of general principle given the instability and unreliability of the international market and the 'competitiveness trap' into which so many small 'developing' economies fall when trying to compete their way to international economic success (Sachs 1985).

c) Develop a self-reliant community economy: This is the centre-piece of sustainable development economic planning. It involves a shift in emphasis from, for example, non-renewable to renewable resource use, federal government programs to an enhanced territorial capital base, dependence on export-import trade to local production and consumption and capital re-circulation.

d) Develop an appropriate balance between the formal and informal economies: While supporting commercial ventures, a critical concern of economic development is to avoid the unstable commercialization of informal or non-monetary activities. Individual, short-term projects which preclude subsistence activities over the long-term should

be viewed with extreme skepticism.

e) Give greater attention to the informal economy: This is a repeated theme of the Yukon 2000 process and it should be supported.

f) Foster new 'appropriate' forms of business: The traditional business structure is under increasing challenge throughout the industrial world. In the Yukon, there is a special need to develop appropriate forms in the formal economy which draw upon, complement and reinforce the values, skills and opportunities in the informal economy. These new forms could be co-operative in structure and lead to enhanced community training, employment, linkages to other businesses and the retention of local capital.

g) Foster economic diversity in both economies: Again, this has been well-documented in other Yukon 2000 reports. The limited productive base of the Yukon's ecology demands a variety of small industries which utilize a variety of resources. There is a great scope for active government support for new businesses although given the limited carrying capacity of the territory, the domestic population should be increased as a method of diversification.

h) Monitor the large-scale corporate economy: Defined standards of operation, strict environmental and social accounting, and full resource rents should be imposed on all commercial operations. Any industrial projects for which government support is requested should be subjected to a 'whole life/cost plus' test where any government investment must return at least the initial investment (cost-plus) over the whole life of the project.

3. Resource Management Institutions - The topic of resource management is clearly of central concern for any economic development strategy in the Yukon. The following are some proposed resource management principles and guidelines that incorporate the principles of sustainable development and thereby ensure appropriate environmentally-sound economic development.

i) Establish an appropriate balance between central and community management authorities: Once again, the primary principle is to increase community management. The fundamental aspects of this include the following.

a) Confer a local veto on regions: This basic principle recognizes that the major source of resource and environmental deterioration is the willingness of central institutions to sacrifice community environments on an incremental basis in order to meet the 'general interest'. To combat this, actual power must be transferred to the community level.

b) Confer management authority on communities: The call for a 'co-management' regime recognizes the wealth of local knowledge and the diversity of such knowledge between areas. It is an integral part of any community-based planning and economic development process.

c) Develop the territorial government's authority to set general standards and regulate resource users: This authority, which is to be exercised in conjunction with enhanced local management powers and techniques, involves such things as setting minimum general conservation standards applicable to all resource activities, drafting and enforcing general pollution legislation, and ensuring broad public participation by non-governmental organizations in governmental and community decisions. This provides a balance between community and central powers and is intended to ensure that resource utilization takes place only according to the highest common standards of conservation.

d) Initiate a territory-wide community planning process for resource utilization, management and conservation: This planning process should seek to provide an on-going inventory of the resource base, the basis for establishing the carrying capacity of the resource base, and primary and secondary priorities for the use of any resource. The process should be regionally based and, in conjunction with land claim settlements and devolution, should seek to develop long-term planning and management processes in the various regions.

iii) Establish dispute resolution procedures: Although many procedures for resolving conflict have been suggested, of prime concern must be to select a process that enhances community ownership and management authority and the growth of a locally-based renewable resource economy within the context of a territorially-established hierarchy of priorities of use.

While the above principles involve issues of institutional design, the following involve matters of actual resource use. It should be stated that this present report generally supports the principles stated in Prescott-Allen and Prescott-Allen (1987) and seeks to complement them by stressing the following.

iv) Protect and conserve the resource base on a sustainable basis: Only by safeguarding the natural environment and heritage of the Yukon and maintaining its renewable resources can the territory be sustainably developed for the benefit of Yukoners.

v) Shift from non-renewable to renewable resource utilization: As a general principle, too much economic dependence exists on non-renewable mineral extraction. The unique attraction and character of the Yukon is rooted in

its ecological and cultural integrity.

vi) Integrate conservation and development: Over-emphasis on conservation is seen as a possible economic constraint unless conservation is implemented in a practical manner. For this reason, sustainable development takes a holistic view of conservation and development recognizing that these two values can only truly be implemented through the structural reform of economic and political relations.

vii) Protect native ways of life: This should be done in the manner which seeks to 'enhance' the basis of subsistence ways of life.

viii) Foster environmentally-compatible resource uses: The trade-off between the short-term but destructive, one-shot resource extraction project and long-term conservation of an area for long-term sustainable, subsistence or informal uses should be reduced as much as possible.

ix) Reduce incompatible uses: incompatible uses should be subjected to rigorous assessment, screening and control. This will help reduce conflicts as will the planning processes set out above and, in particular, will assist in setting clear priorities.

x) Increase resource returns: All resources which are used should be managed so as to increase sustainable social returns to the Yukon. This implies improving employment and creating infrastructure, enhancing community capital retention, diversifying the industries being created and so on. With regard to non-renewable resources, maximum resource rents should be assessed. The goal of this principle is not to maximize the economic use of Yukon resources, but to obtain optimum benefits for the region from any resource use.

Application of each of the foregoing principles and the creation of the recommended management institutions and regimes should ensure that the Yukon's future economic development is development that will be truly sustainable and will allow the enjoyment of the riches of the Yukon while recognizing the realities of resource limitations and the carrying capacity of the territorial environment.

SECTORAL APPLICATIONS

The principles of sustainable development can easily be applied to each of the various economic sectors active in the Yukon. This section presents several sectoral analyses based upon the previously discussed principles. However, given the scope of the issues involved, the following analyses are intended simply to indicate in what manner the principles of sustainable development could be sectorally applied. In no way should the analyses be considered exhaustive.

Mining - For the past century, mining has been the largest source of wealth for the Yukon. However, due to an increasing amount of recycling in industrialized regions, high technology substitution, expensive operating costs in the Yukon and foreign competition, the world market for Yukon mineral products must be considered increasingly uncertain and thus, a need exists to re-evaluate the historical dependence on mineral exports to other resource uses.

Regardless of its future status, management of the mining sector would benefit from the incorporation of sustainable development practises and principles. These principles should ensure that maximum benefits accrue to Yukoners, the environment is not damaged, and that non-renewable resources are utilized at an optimum rate for long-term needs.

In the mining sector, a tension presently exists between the use of mineral resources as an important source of external capital and the economic, environmental and social instability which this dependence brings. This tension should be ameliorated by:

- i) making mineral projects accord to strict environmental, social and reclamation standards particularly to avoid large-scale impacts on ecological and subsistence systems;
- ii) deriving maximum community benefits from any project under the auspices of community management authorities;
- iii) implementing new energy and environmentally-efficient techniques of mineral extraction and processing;
- iv) establishing broad planning processes both to identify areas in which mining shall be prohibited are identified and to implement careful siting controls where mining shall be allowed;
- v) charging full resource rents and implementing the 'polluter pays' principle for reclamation and any harmful environmental effects; and,
- vi) diversifying the economy away from non-renewable resource dependence.

Tourism - Tourism is seen as offering a major new source of external capital, commercial diversification, and development of local services and infrastructure. It is also perceived to be environmentally benign. Tourism does offer these possibilities, especially the wilderness-based 'adventure' tourism to which the Yukon is well-suited and for which the market is growing rapidly. However, a simple 'market-driven' approach to the industry offers great dangers as well as rapid "transformation of fragile natural and social systems by tourism raises considerable cause for concern" (Harrison *et al* 1984). Even in "the field of adventure tourism, market pressure can undermine any one, or all of the

principles of sustainable development" (Johnson 1986). Thus, in developing tourism as a basis of economic diversification and, especially as a replacement for mineral resources as a large source of external capital, the following principles should be considered:

- i) the pace and character of development should be community-controlled to ensure that the industry 'fits-into' rather than overwhelms the existing social fabric;
- ii) development should be operated so that capital and spin-offs are captured at the community level;
- iii) the local environment, cultural heritage and general quality of life should be protected and tourist operations managed under strict environmental and social (community) controls and in light of the area's carrying capacity;
- iv) tourism should supplement other economic endeavours, including subsistence activities, rather than lead either to a new economic dependence or the displacement of traditional land uses;
- v) development should be gradual and small-scale to enhance community assimilation of changes;
- vi) impacts should be monitored at all stages so that appropriate adjustments can be made before serious damage is done; and,
- vii) tourist development should aim for an 'optimal' level of growth rather than a pattern of continuous growth.

Agriculture - Due to low carrying capacity, relatively poor soil quality, and a short growing season, the potential for large-scale commercial agricultural operations is low. However, in allocating agricultural leases and designing operations several factors pertaining to sustainable development should be acknowledged.

These include:

- i) the need to protect the subsistence food cycle by protection and preservation of natural systems on which these food cycles depend;
- ii) the desirability of encouraging as great a degree of self-provision as is economically possible for the Yukon society as a whole. Many techniques for this exist from encouraging private gardens to new commercial techniques of hydroponics and greenhouses and to an expanded infrastructure of production and storage;
- iii) the desirability of using non-destructive agricultural

practises so that the chemical nutrients in the soil are maintained, toxic pollution and accumulations are avoided, erosion is controlled and pests and diseases are avoided; and

iv) the need to foster especially those enterprises and general infrastructure which will reduce the large trade deficit in food products.

Forestry - As with agriculture, due to ecological and environmental constraints, the potential for large-scale forestry development is marginal in the Yukon. In many areas of the world large-scale forest exports continue to cause serious ecological damage in terms of soil erosion, disruption of the hydrological cycle, and loss of habitat and genetic diversity. As well, forestry can disrupt traditional social patterns. Given the limited prospect for viable forestry operations and the socio-ecological implications of development, promotion of large-scale forestry operations should be considered very cautiously.

Solutions to the socio-environmental problems related to forestry indicate a close fit of conservation with development. Of particular interest is 'agro-forestry' which integrates small-scale forestry with continued traditional uses of the forest as well as with small-scale agriculture and settlements. Of critical importance is avoiding both large-scale conversion of the forest landbase to monoculture forestry and alienation of control to non-community interests.

A sustainable development approach to forestry should entail:

i) small-scale community forestry with the land base under local control and management. In order to maximize local benefits the following should be considered:

- a) tenure should be securely held by community interests and businesses;
- b) resource rents should be retained by the community and be applied to local forest management and reforestation;
- c) production facilities should be developed locally on a small-scale and integrated with other logging operations; and,
- d) products should serve community needs and thus facilitate import substitution

ii) full utilization and avoidance of wastage of the resource;

iii) resources use in manner that supports import substitution; and,

iv) the careful regulation of production and/or export facilities utilizing, where possible, co-operative structures with significant community and territorial control.

Hunting and Trapping - Of all the sectors, the hunting and

trapping sector has the longest history of 'sustainability'. However, the potential still exists for the wildlife 'resource' to be used on an unsustainable basis or in a manner which harms traditional use patterns. As a result a sustainable development approach to hunting and trapping should be oriented to:

i) the need to protect the subsistence food cycle by protecting and preserving complete natural systems on which the cycles are dependent;

ii) recognition of the tenets of conservation in managing all species to ensure species survival and the maintenance of genetic diversity;

iii) community control of, and active participation in, the management of hunting and trapping for commercial, recreational and subsistence uses; and,

iv) the use of wildlife primarily to meet the needs of subsistence users and secondarily the desires of commercial and recreational wildlife users.

CONCLUSIONS

The ecological limitations of the Yukon environment combine with economic constraints of market distance and instability to limit the potential for growth of the Yukon economy. The territory has historically relied upon resource extractive industries that returned limited long-term benefits to the Yukon while imposing serious environmental and social costs. Clearly, as we enter the next century this pattern of 'development' cannot be maintained. Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the directions of investments, the orientation of technological development, and lifestyles and institutional changes made are consistent with future as well as present needs. It must be the direction of the future.

As devolution and land claims settlements proceed, the Yukon is entering a new phase of growth and maturity. The time for restructuring our economy to a more stable and beneficial economy for present and future generations of Yukoners is now. Sustainable development, as outlined in this paper, provides a consistent approach to economic development for which there is a broad range of support and agreement. It is a 'holistic' model for planning and development - one that is ideally suited to the heritage of the Yukon and to its opportunities today.

APPENDIX I: SUSTAINABLE DEVELOPMENT
-- THEORETICAL AND PRACTICAL ISSUES --

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INTRODUCTION: Origins of Sustainable Development

The Sustainable Development approach to economic planning has its origin in four related global trends:

1. the increasingly unstable, roller-coaster global economy of the 1970s and 1980s;
2. the mounting evidence that established patterns of economic growth are greatly responsible for serious and long-term environmental damage;
3. the growing recognition that traditional, western approaches to economic development, especially in Third World countries, are not working; and,
4. the evolving awareness that a reformist ("public participation") approach to resolving basic institutional problems has not produced the needed changes.

Two immediate aspects of Sustainable Development should be apparent. First, it is oriented to conservation of resources and the environment only as part of a larger holistic approach to economic and political development in general. Thus, while it is strongly conservation-based, Sustainable Development is more a form of economic planning which, it is believed, will alone make resource conservation truly possible. In this light, a Sustainable Development approach to economic planning is essential to achieving the seven goals for economic development identified in the Yukon Development Strategy:

1. The option to stay in the Yukon;
2. Taking control of the future;
3. Achieving an acceptable quality of life;
4. Achieving equality;
5. Increased job opportunity;
6. Diversification of the economy;
7. Increased participation in decision-making.

The second noteworthy aspect of Sustainable Development is that the concept is of direct relevance not only to Third World countries but, to the economic policies of so-called "developed countries". These latter countries are involved in all the above trends to which Sustainable Development is a response.

II: KEY ISSUES OF CONCERN TO SUSTAINABLE DEVELOPMENT

A: Theoretical Issues: Challenging Accepted Economic Measures

In looking at the requirements for a "sustainable economy", the most dramatic argument concerns the nature of economic growth. At the theoretical level, it is asserted that economic models which we have long been taken as indicators of our economic health, for example, the model of Gross National Product (GNP), are misleading. Growth in the GNP is defined in terms of goods and incomes and thus overlooks the impact economic growth has on resource sustainability and environmental health as "neither the withdrawals from the stock of natural resources (energy, raw materials, water, air and land) nor the destructive effects of waste and pollutants register on the economic balance sheet" (Liepert 1985).

To a great extent, then "indicators" of the performance of the whole (or "macro") economy create our perception of whether or not the economy is in fact performing well. If GNP is rising by 3 or 4% per year, we believe that the economy is strong--even if there is 14% unemployment and a continuing, unmeasured decline in the natural resource and environmental base. The "image we have of development is the image we receive through its indicators. If indicators are inadequate, not only will our perception be distorted, but policies and actions will be counterproductive" (Max-Neef 1984).

Traditional economic measures such as GNP are deficient in a number of ways:

- components of welfare and well-being which are not associated with the monetary production of some good or service are ignored;
- expenditures on some "goods" (such as pollution control and hospital services) are included within the GNP even though they may be "defensive" expenditures combatting a decline in the quality of life;
- many of the physical costs of economic growth (such as the erosion of the renewable resource base) are not included in the cost accounts;
- many of the social costs of economic growth (such as the loss of traditional cultural integrity) are not included in the cost accounts.

It is of concern that the deterioration of many of these unmeasured components of welfare goes together historically with the growth of industrial production--but only the latter is recorded as an increase in the national account. As one commentator puts it:

[T]he gross operating surplus of the mining sector in the system of national accounts, represented by the sum of the profits made by all the different enterprises involved in resource extraction activities, does not represent true rewards to factors of production (ie.

rent) alone but also reflects revenue from a 'one time only' capital sale and the irredeemable loss of a non-renewable natural asset. By failing to measure and recognize an appropriate depletion allowance, conventional national accounting procedures automatically allocate a disproportionate share of current-income flows to present generations at the expense of future generations (Wells 1986).

Clearly, such a system of economic accounting is unsatisfactory for a region or country seeking to develop and monitor a longer-term "sustainable" economy.

In addition, macro-level measures of the performance of the monetary economy also neglect the welfare of the non-monetary, or "informal", levels of the economy. In fact, in a rural economy such as that of the Yukon, perhaps more of the area's economic work actually gets done by the informal economy than by the formal economy and thus its omission is of even greater concern.

To present a more holistic view of the social, environmental and financial situation of a region or country, Sustainable Development theorists have begun to develop alternatives to traditional production-oriented accounting systems which do not ignore the natural and social components of welfare. In Norway and France, new natural resource accounts, measured in physical units, have been devised for the most important resource sectors. These units are not translated into a common monetary value, or into some common aggregate physical value (Wells 1986). Similarly, the Paris-based Organization for Economic Cooperation and Development (OECD) has devised a "social indicators" program which envisages a hierarchy of social indicators. At the top of the hierarchy is a measure of "well-being" that is based on a number of indirect measures such as changes in life-expectancy, standards of health, nutrition and so on (Anonymous 1977). Some commentators have suggested that these accounts should be aggregated and monetized, but this would simply re-introduce the economic error (See Wells 1986). When applied to development planning a broadened system of accounts would lead to a more qualitative concept of "differentiated development" (Liepert 1985). This would be more sensitive to a wider range of costs and benefits than are today's systems of production-oriented (monetary) measurement, and would thus greatly enhance the tasks of political decision-making and resource management.

At the "micro" level of economic analysis, similar changes are foreseen for economic evaluations of specific industries, such as proposed hydro-electric projects or commercial forestry operations. For example, monetary calculations themselves have to improve by taking the full "life-cycle"-costs and benefits into account and by including all pollution costs. As well, non-monetary impacts must be measured and compared on broadened scales of physical and socio-cultural accounts. And, finally, long-term impacts on system sustainability must be evaluated, something

traditional, short-term, benefit-cost economic calculations simply cannot do.

Theoretical challenges are also being made to the efficacy of accepted techniques of central bureaucratic management. Until recently, planners have assumed that the failure of past economic and resource planning can be attributed to inadequate techniques. This tendency is evident in many of the papers submitted to the Yukon 2000 project which articulate better planning as the solution to Yukon resource needs. However, many today find fault with centralized planning itself--its susceptibility to capture by vested economic interests, its need to aggregate data rather than differentiate local needs, its removal from direct field experience, its tendency to take its own bureaucratic expansion as the paramount need, and so on. Instead of articulating comprehensive planning strategies which are assumed to be capable of resolving conflicts through more rational planning techniques, many argue for the need to develop new techniques of decentralized control and management. As well, recognizing the inevitability of conflicts in values and interests, it is argued that these conflicts can, in the long run, be reduced only by structural changes in economic and political institutions, not by better central planning. The practical changes required to ensure Sustainable Development are presented below.

B: Practical Issues: Challenging Established Institutions

At the practical, institutional level, the concern about economic growth and institutional conflict is a concern about future economic and political structures. On the one side are those who claim that the world economy is evolving into an "un-sustainable" structure. From such a perspective, more economic growth, in its traditional form, will only exacerbate this lack of sustainability and lead to increasing instability. To halt this process, fundamental structural changes are called for (M'Gonigle 1986).

On the other side are those who claim that what is needed to correct economic instability, environmental decline and underdevelopment are more rational strategies of resource and economic management. The difference in these perspectives is again evident in the Yukon context, for example, in the fundamental contrast between the structure of the informal and native economies and that of the formal/urban-industrial economy. The differences in these economic structures pose major choices not only for future management, but for the entire shape of future institutions.

Thus related to the issue of economic growth is the issue of political decision-making and management. One Sustainable Development theorist has argued that industrialized aid and development programs are in fact traditionally "concerned with maintaining flows of resources that are non-existent or running out at home" (Riddell 1981). Another comments that this

orientation so skews local policies and decision-making that it produces economic underdevelopment and social inequity. The problem is:

the global structuring of man-resource relationship in which a minority of nations have...shored up the large bulk of world resources.... The result is that most [leaders] have failed...to pursue policies within their own countries that are called forth by their socioeconomic, demographic and cultural conditions which happen to be quite different...(Kothari in Glaesner 1984).

To resolve this crisis of leadership, Sustainable Development theorists see the need to change the way political and economic decisions are made and, above all, to institutionalize "meaningful citizen participation in the future-oriented decision-making processes and environmental (cum) development planning" (Glaesner 1984). The character of this participation is critically important, insofar as it implies actual decision-making control at the local level. Again, given the gap between the urban and rural societies, this issue of the character of political management must be addressed carefully.

III: OPERATIONALIZING SUSTAINABLE DEVELOPMENT

A: A Survey of Definitions

Many definitions exist of what is, in practice, Sustainable Development. The pioneer thinker Ignacy Sachs defines the related concept of "ecodevelopment" as being:

an approach to development aimed at harmonizing social and economic objectives with ecologically sound management, in a spirit of solidarity with future generations; based on the principle of self-reliance, satisfaction of basic needs, a new symbiosis of man and earth; another kind of qualitative growth, not zero growth, not negative growth (CIDA 1978).

The German writer Bernard Glaesner (1984) distills the ecodevelopment approach to four components:

- (i) satisfying social needs;
- (ii) maximizing social participation in any decisions and actions which affect you;
- (iii) achieving ecological balance;
- (iv) all the above in the context of increasing self-reliance and reducing dependent (exploitative) relations.

Again, these definitions point out the need not only to achieve better social and natural conditions but to do so by changing economic relations and providing meaningful public participation in decision-making.

The Environment Liaison Centre, an institution affiliated with the

United Nations Environment Program in Nairobi, Kenya, identified 7 priorities for Sustainable Development in Third World countries at its 1985 Global Meeting on Environment and Development:

1. Self sufficiency in food production and elimination of hunger through sustainable agriculture.
2. Preservation of the natural resource base for future provision of basic needs (at the local level).
3. Improvement of health services, formal and informal.
4. Elimination of poverty.
5. Improvement of literacy, formal and informal.
6. Empowerment of people to take action to solve their own problems with their own resources.
7. Self-determination and equitable access to means for subsistence production (land, water, livestock, labour, seed, forests, range, information, etc.)(Anonymous 1985).

Here again, one can see the four basic components of Sustainable Development identified above: the need to merge social needs (#1,3,4,5); with environmental needs(#1,2); in the context of a restructuring of economic institutions (#6,7); and a decentralization of decision-making authority (#2,6,7). Each of these four components will be reviewed, in turn, below.

B: Operational Characteristics of Sustainable Development

1. Social Needs

In addressing ecologically-based economic development, the first criterion is meeting basic social needs. In Third World countries these have been identified as eliminating poverty, hunger and disease, as well as improving education, especially literacy. One of the major reasons for this concern is the recognition that poverty itself is a major cause of environmental abuse, and that similarly, environmental balance requires social stability. This means, as well, that long-term economic planning is not some remote academic concern but entails immediate attention to the correction of social inequities. This is a fundamental principle that is repeated time and again by Sustainable Development advocates.

2. Environmental Needs

The second criterion is maintaining ecological balance. This entails a broad concept of the conservation of resources. In an economy heavily based on the export of non-renewable materials (minerals and fuels), conservation implies maximizing the local benefits from such export as well as minimizing the costs, especially over of the long-term. This has historically been a fundamental problem with development practice where, on the one hand, resource rents have not been captured locally but have been exported as excessive profits and, on the other hand, the full costs of mineral activity (such as pollution damage, resource depletion) have been borne by the local region. In contrast,

where the benefits are retained locally, they may be applied to assist the economy to diversify away from a dependence on non-renewable exports to a more "sustainable" economy based on renewables and a stronger local economy.

Conservation of renewable resources implies several policy directions as well. First, it demands regulation and protection of common property resources such as water quality, wildlife, forest lands. These are resources which are not individually owned and thus have tended to be those most subject to abuse. Inadequate management is both destructive environmentally and inefficient economically (Repetto 1985). Where there are large indigenous populations under pressure from industrial developers, the management of these resources poses especially sensitive social, as well as environmental, problems. Here, local self-management is encouraged, within some general standards set by central authorities.

The second policy implication demands environmental protection with regard to all activities. This is especially true for large-scale industrial projects which should be subject to full assessment, monitoring and control.

Finally, conservation of renewable resources demands a development strategy which does not exceed the carrying capacity of the land and resources. While this has the greatest implications for Third World population pressures and agricultural self-sufficiency, it also applies to other economies, which must be wary of developing beyond the limits of the local resource base. It is, after all, "overdevelopment" which leads to pressures to exploit local resources on a non-sustainable basis, or to manipulate other regions to make up the deficiency.

3. Economic Reform

The third criterion is the reform of existing economic institutions. This reform is necessary at all levels. At the simplest, it implies achieving economic "efficiency" in the most traditional economic senses. For example, it implies charging full economic rents for the exploitation of national and regional resources, so that the full value of the resource is "captured" by the local owner (benefits). It implies a strict application of the "polluter pays" principle so that local communities do not subsidize non-local resource companies by accepting a degraded environment as the price of industry (costs). These issues have been exhaustively discussed by standard neo-classical economists and are not the special province of Sustainable Development theorists.

Of greater concern to Sustainable Development commentators are the changes in economic structures which are necessary for the local benefits to be maximized and local costs to be controlled. The critical factor here is local control of resources. This concept implies greater self-management of the resource base and a greater say in how that resource base is to be allocated and utilized. It

implies, as well, a strengthening of the local economy in order to escape a dependency on distant markets and corporations, a dependency which undermines local alternatives and bargaining power. A host of structural economic changes are implied here including import and export substitution; the diversification of the local economic base; the democratization of economic structures with new economic forms such as production and financial co-operatives; the enhancement of the informal, non-monetary economy; and, the retention and recirculation of capital at the local level.

In the definition cited above, Ignacy Sachs referred to "another kind of qualitative growth, not zero growth, not negative growth". Recognizing the limits of the conventional wisdom of global "interdependence", Sustainable Development implies, in contrast, a new type of economic growth that fosters the development of a local, sustainable economic infrastructure based upon resource self-management and greater productive self-sufficiency. Regions that are now heavily dependent upon the export of non-renewable materials as the basis of local wealth are those where this new form of growth should be at the highest levels. At issue is not an anti-modern return to complete self-sufficiency (what is frequently called "de-linkage" or "autarky") but a shift in the balance of economic activity toward more stable, less expansionist economic practises.

4. Political Reform

The fourth criterion cited by Sustainable Development theorists is that of political self-determination. This criterion is ironic when one considers that many Third World countries which are the focus of Sustainable Development thinking only recently attained political independence from colonial powers. As many development writers have pointed out, however, formal independence has often meant informal dependence through economic and more subtle political ties--the so-called process of "neo-colonialism". The antidote to this process is two-fold.

First is the need for enhanced local authority at the regional and village level. The Environment Liaison Centre refers to the "empowerment of people to take action to solve their own problems with their own resources". Robert Riddell (1981) comments:

As the most effective operational base for eco-development is local and regional, its incorporation into sub-national government and planning processes (regional, rural and urban) usefully enables it to grow on the local foundations for government that have already been laid.

Second is the need for enhanced management capabilities at all levels. As the development economist, Robert Repetto (1985) puts it:

Overcentralized, bureaucratic processes fail to take

advantage of local knowledge of needs, preferences, and opportunities--or of the managerial capabilities of local communities. Partnerships between the public sector and community organizations have succeeded in improving health and family planning programs, the urban environment, soil conservation, watershed protection, community forestry, and other resource programs.

What is needed, therefore, is a dynamic balance of management capabilities at both the local and bureaucratic levels. Although this goal may sound self-evident, achieving this mutual balance is a most difficult and little-accomplished task in any country.

Lastly, none of these goals can be accomplished without broad support. Consensus-building and mutual education is essential if the necessary political will to create a new direction is to be realized. Yukon 2000 is clearly such a process.

CONCLUSIONS

Sustainable development thinking is, of course, to be applied at a number of sectoral levels (agriculture, forestry, health and so on). This is done in another section of this submission. Given the large number of policies and recommendations being put forward in the Yukon 2000 process, it is the critical, institutional and structural perspective which will allow us to identify those few changes upon which overall success will ultimately depend.

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