

Literature Review:

Reviews on Antarctic Compliance Framework and Critics:

Past, Current and outlook

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1.0 Scope: The Antarctica

Coming from a social science perspective, Antarctic matters are bounded by environmental sensitivity issues, earth science, political interests and other strategic movements behind the scene.

Since 1959, many entities came to agreement and collaborate in many ways to keep sustainability in Antarctic surroundings.

Antarctica Treaty and its conventions come to regulate implications associated with Antarctica surrounding matters.

In the development of Antarctica matters, the Antarctica Treaty and the following conventions formed the Antarctica Treaty System (ATS) that further defines three major pillars into the system: peaceful purpose, freedom of scientific research and natural reservation.

At the frontier of environmental matters, sitting on resourcefulness continent and at the backyard of the globe, Antarctic issue emerged.

It falls into politic spotlight; then, the sustainability in the current and the future will feed appetite for politicians, scientific researchers and commercial seekers.

Having hopes for better place to become in Antarctica, efforts are deemed significantly required for disciplinary and responsibilities for parties involved.

The ATS system serves major mechanism to maintain its balance since 1959. It tends to assure sustainability issue in place in Antarctic environment.

1.1 Attempt

The 'effectiveness' of a regime has been defined as "the impact it has on certain basic problems which addressed – whether these problems are conceived of in economic, environmental or any other terms".¹

In other words, to determine the effectiveness of an international agreement, the purpose of the agreement should be compared with the actual situation that exists after a certain period of time and an attempt should be made to find a causal link between these two. The 'effectiveness' of an international agreement depends on two important aspects:²

- a) the ability to define the problem and to find agreement during the negotiations on the most promising instruments to address this problem;
- b) an adequate 'implementation' of the international agreement

¹ p.20, Bastmeijer, 2003

² p.20, Bastmeijer, 2003

To discuss Antarctica Treaty System, this review will form its rationale of argument (or concerns) by examining time factor, political movements and concerns, realisations of ATS major three pillars (peace, freedom science and nature reserves). This attempts to integrate various critics over the years, empirical papers in Antarctica subject matters accompanied by analysis and concerns for the future references.

2.0 Antarctica Treaty System

The Antarctic Treaty System consists of six basic parts:

- 1) The Antarctic Treaty;
- 2) Recommendations adopted by the ATCP
- 3) the 1972 Seal Convention;
- 4) the 1980 Antarctic Marine Living Resource Convention;
- 5) the 1991 Antarctic Environmental Protocol, with annexes;
- 6) the Antarctic Mineral Convention (suspended).

The Antarctic Treaty is the core of the whole Antarctic Treaty regime, as the legal hub to regulate activities in Antarctic common.

During 1950 development, several states express interests and concerns in the South Polar Region.^{3 4 5}

These negotiations culminated in the Washington Conference and the promulgation of the Antarctic Treaty on December 1, 1959. The agreement entered into force for those twelve states on June 23, 1961.

2.1 Overall:

For nearly four decades, the Antarctic Treaty has functioned without single serious violation of its norms, rules, principles, or procedures reported by its member governments.

Joyner (1998) conclude four factors for its overall achievements, including

- International citizen good will,
- Scientific Research and exchange
- Information sharing further consolidate international cooperation
- Negative impact

³ In 1956, India suggested that the "Question of Antarctica" be inserted on the agenda of the United Nations General Assembly.

⁴ The ascendancy of the United States and the Soviet Union as dominant player on the Antarctic continent, the United States exerted a major influence over Antarctica, not only because of its preponderant presence there.

⁵ The Soviet's assertion of a historical right to make a claim in Antarctica, and the possibility that they one day might exercise it, raise further concerns among the United States and other states regarding its further governance of the continent.

There are rewards for compliance. Some governments may feel that they want to be good international citizens. Some may want to work with other governments in order to gain influence among them or to receive "favors" in return for compliant behaviour beneficial to others.

Compliance permits acquisition of special knowledge, training and skills. Regime compliance brings with it access to new scientific data and technology pertaining to the Antarctic and with possible applications in other areas. Scientific research and exchange – hallmarks of international cooperation in Antarctica – supply tangible glue that helps keep the ATS regime in place

Compliance enables information exchange that is beneficial to all participants. Information sharing through the ATS regime includes the exchange of U.S. scientific personnel, the exchange of Australian data on polar medicine, shared use of Australia's heavy overland machinery, and learning more about Italy's alternative energy system and waste management systems. Information exchange among ATCPs is increasing the global knowledge base about global climate change, sea level rise, and OZONE depletion – all uses that seriously affect the entire international community.

Penalties or losses might be incurred for noncompliance. Concern over the possibility of punitive sanctions for noncompliance could theoretically induce members to comply.

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2.2 The Seal Convention^{7, 8}

To pursue conservation, the Seals Convention coordinates the exchange of information and provides for scientific assessments of species' health.

Like the Antarctic Treaty and the Agreed Measures, the Seals Convention identifies SCAR as the agency to perform these roles.

2.3 The Antarctic Marine Living Resources^{9, 10}

⁶ P.107, 1998

⁷ The product of the London conference, the Convention for the Conservation of Antarctic Seals, was opened for signature on June 1, 1972, was signed by all twelve participant ATCPs, and entered into force in 1978.

⁸ p.73, Joyner, 1998

⁹ Negotiated in 1980, CCAMLR entered into force in April 1982. The purpose of CCAMLR is to regulate a high-sea activity, namely the harvesting of living marine resources.

¹⁰ p.73, Joyner, 1998

The conservation agreement applies to all marine living resources within the Antarctic ecosystem and “related and associated ecosystems,” covering an area roughly bounded by the Antarctic Convergence.

Through its ecosystemic approach, the Convention encompasses all “the marine living resources” of an area and covers all species of living organisms, including seals.

CCAMLR overlaps in jurisdiction with the Antarctic Treaty, the Agreed Measures, and the Seal Convention, and its provisions make its relationships to those instruments explicit. CCAMLR likewise acknowledges the International Whaling Convention, but by expressly excluding its from the family of ATS agreements.

2.4 The Antarctic Minerals Convention^{11, 12}

Australia and France governments did not ratify this agreement, announced in 1989; leading to the Madrid Environmental Protocol instead.

2.5 The Madrid Environmental Protocol

After the suspension of Mineral Convention, the Madrid Protocol was the product of series of discussions to ensure:

- No Mineral Development
- Standards for conduct human activities
 - Code of Conduct
 - Compliance documentation requirements;
 - Environmental Impact Assessment. (VIII)
 - Requirement of cooperation among parties (VI)
 - Inspection procedures (XIV)
 - Emergency Response Action (XV)
 - Liability (XVI)

In sum, the Protocol has within its provisions specific institutional links that make it by intent, design and definition a constituent part of the Antarctic Treaty and its family of associated international agreements.¹³

3.0 Concerns

¹¹ p.73, Joyner, 1998

¹² From 1981 through 1988 the Antarctic Treaty Consultative Parties (ATCPs) met to produce a special regime that would regulate the prospecting, explorations, and exploitation of mineral resources in the Antarctic should these activities occur there.

¹³ p.81, Joyner, 1998

International reflections, debates and campaign about climate change brings more discussions globally. Global awareness in climate change draws much attention in the recent years¹⁴, especially the unique characteristics of Antarctic agenda.

The establishment of Antarctic Treaty never attempted to deal comprehensively with all problems that might confront the treaty regime. Future concerns could be addressed by ATCMs within the Article IX authority of making recommendations.¹⁵

However, among the issues in climate change, the verdict is open, but one does well to note the ideological intent, as Aaron Wildavsky did:¹⁶

" Global warming is the mother of all environmental scares ... Warming (and warming alone), through its primary antidote of withdrawing carbon from production and consumption, is capable of realising the environmentalist' dream of an egalitarian society based on the rejection of economic growth in favour of a smaller population eating lower on the food chain, consuming a lot less, and sharing a much lower level of resources much more equally. "

(Wildavsky 1992)

3.1 Natural Science:

Sustainability – the New Solutions?

Since 1980, the enemies of economic growth have shifted from fears about resource depletion to environmental destruction, pointing to local calamities and climate change, which is generally attributed to human interaction with the climate and not, for example, to fluctuating natural factors such as solar cycles.¹⁷

Most of the changes to nature conservation now discussed far from radical. These measures go directly against cultivating the adaptive capacity that proofs our modern, open knowledge societies against eco-collapse.¹⁸ Humanity has always been 'running out' of natural resource, but discovered and normally mobilised new ones all along. For example, Athens ran out of timber in the early Classical period once Attica was deforested. Thanks to the institutions of free markets and private property, timber prices went up and induced merchants to import timber from Asia Minor.¹⁹

¹⁴ As early as 1972 the Stockholm Declaration produced from the United Nations Conference on the Human Environment had formally recognised the global, interdependent character and severity of environmental threats.

¹⁵ p.66, Joyner, 1998

¹⁶ p.9 – p. 11, Kasper, 2005.

¹⁷ p.9 – p.11, Kasper 2005

¹⁸ p. 19, Kasper 2005.

¹⁹ p. 16, Kasper 2005.

Kasper implied the rising environmental agenda discussion does not necessarily form the resolution for climate change issue; instead, those driving forces interferes natural selection process. This is the normal state of affairs; collapses are rare exception.

Kasper suggests factors that favors institutional innovation: (p.18, Kasper 2005)

- great openness to idea,
- people,
- product and capital,
- democracy
- and a can-do spirits.

3.1.1 Natural Selection

Economics Nobel laureate Fredrich Hayek pointed out that modern economics has little to do with *oikos* – the deliberate rationing of a given, scarce harvest to last the traditional household through the winter – but much more with *katallaxis*²⁰ (Hayek 1973)²¹

Societies in which 'might is right' may of course persist with their traditional ways, but they then have to bear the consequence – including, in the long term, that more dynamic neighbours take control or that they collapse when new challenges emerge. Not all sets of institutions are of equal value for attaining prosperity and coping with unavoidable change. The historic evidence certainly speaks against cultural and institutional relativism.

The justifications to climate change from human activities are most likely due to the competition to stay on political power.²² In the long run, prosperity depends on the continuing control of political power and a pragmatic priority for economy growth.²³

Time-honored institutions may sometimes be based on delusions and stand in the way of attaining fundamental values. The evolution of institutions that promote the modern economy and broad-based growth is most likely to occur when individuals enjoy mainly individual property rights and can deal freely with members of other communities (the open society).^{24 25}

²⁰ This Greek word refers to the spontaneous discovery of new, useful knowledge when people exchange ideas and goods, widening production possibilities. Whereas rationing of scarcity is the dismal face of economics, catallactics is its optimistic human face.

²¹ p.9 – p.11, Kasper 2005

²² Rulers and elites are most likely to enhance the external institutions when they themselves are exposed to political competition and consider broad-based prosperity a precondition for staying in power.

²³ p.13 – p.15, Kasper 2005.

²⁴ p.9 – p. 11, Kasper, 2005.

Specialisation and trade – which have been a driving force of prosperity and institutional innovation.²⁶

3.1.2 “Rocket Science” v.s. “Learning Curve “

It is important that successes and failures of competition and cooperation have direct feedback to individual decision maker through profit and loss. Then, the internal institutions are adapted to changing circumstances in evolutionary ways, by experimentation, experience and individual selection.

In view of the contradiction between humanity's obvious material progress and predictions of an ecologically caused cataclysm of the world economy.

Individual valuations, on which opinions may legitimately differ, when assessing social-science assertions and predictions, one is therefore obliged to speculate about the deeper motives of those who proffer their subjective valuations.²⁷

The only defence against a return to the Malthusian²⁸ condition is a better understanding of economic driving factors and human progressions.

This depends not only on physical factors and the hardware of development, but also on the software of evolving, problem-solving institutions, which allow enterprise and creativity to cope with new circumstances and changing preferences in societies.²⁹

3.2 Social Science

Political Climate:

Economic systems, like natural ones, are complex; interference tends to produce deleterious, unforeseen side effects.

In affluent societies, these activities might be harmless and affordable, were it not for the danger of self-fulfilling prediction. The 'solutions' all too easily lead to political interventions, which destroy the very institutions on which modern wealth and the survival of our very civilisation are built, as emphasised by Nobel laureate Friedrich Hayek (1989).

²⁵ Prosperity and peace elude regimes that persist without both sets of institutions, or with institutions that discriminate against the majority, concentrate political and economic power in a few hands, or exclude outside influence.

²⁶ p. 16, Kasper 2005.

²⁷ p.21, Kasper 2005.

²⁸ 'An essay on the Principle of Population', Malthusian, T. (1798);

http://en.wikipedia.org/wiki/Malthusian_catastrophe

²⁹ p.22, Kasper 2005.

Key as positive force for increasing compliance with the ATS regime are the mutual benefits and opportunities that accrue from ATCP group participation.³⁰ In fact, interests that states share in avoiding the consequences of pure anarchy in particular issue-areas lead them to form regimes as a basis for shared expectations.

But cooperation does not necessarily mean that states have achieved a harmony of interest. States may come to cooperate because their interests on a given issue coverage, because working together gains them more (or costs them less) than working apart, because they value what may cost them, or for some combination of these or other reasons.³¹

3.2.1 The Governance – Symbolic value

The process of adding protocols invites the risk of politicizing issues, however. Developed states might be tempted to monopolise relevant scientific information for their own negotiating advantage.³²

Other factors also contribute to perceptions of a government's special prominence among the ATCPs. A state's status as claimant, its degree of scientific investment in Antarctic activities, and its level of technological expertise – all of these add to the political clout of a government in Antarctic affairs.

Effectiveness in compliance often evolves in an indirect manner. Compliance relates to the degree of publicizing and documenting a decision objective, which is made scientifically unfettered by political considerations.

3.2.2 International Cooperations

Upon one of the pillars and unique achievement in the Antarctica Treaty System, it provides cooperations among parties, to the absence of national boundaries under the Antarctic Treaty.

Decision-makers in different governments respect each other and become closely connected by bonds of friendship, community, and dedication to mutual purposes, the prospects for regime cohesion tend to increase. To a considerable degree, this has been the diplomatic situation among Antarctic Treaty governments over the past four decades.³³

Contributions like perceived gains, effective communication, size of universal community; consensus decision making process and reciprocity actually benefit efficiency in Antarctica Treaty System and its community circle.

³⁰ p.115, Joyner, 1998

³¹ p.84, Joyner, 1998

³² p.40, Joyner, 1998

³³ p.115, Joyner, 1998

Moreover, the treaty fostering the relationship among parties demonstrates its symbolic values in the globe.³⁴

3.3 In Principle: International Law

Antarctica as Common Heritage of mankind

Four principal approaches in modern international law pertain to status and “ownership” of international spaces: 1) *res nullius*³⁵; 2) *res communis*³⁶; 3) the common heritage of mankind concept³⁷; and 4) *res publica*³⁸.

³⁴ Several factors contribute to cooperation in the Antarctic Treaty System and enhance the efficacy and legitimacy of its composite regime.

1. Incentive: the perceived gain made by policy coordination around a new agreed-upon standard can enhance cooperation.
2. Clear and ongoing communication among member governments improves the regime efficacy and legitimacy.
3. The size and complexity of an association also can influence the ability to bring about cooperation. Universal cooperation is generally harder to obtain as the number of members and the complexity of the association increase.

In a consensus decision-making process, the more states that participated, the more likely it was that one government might play the role of spoiler.

4. Reciprocity tends to work within an association as a general norm. Reciprocity in ATS dealings generates much goodwill, although relatively few opportunities are available for it. Emergency assistance, rescue operations, and transfer of medical supplies from one station to another are salient examples of reciprocity opportunity.

(p.112, Joyner, 1998)

³⁵ Property of nobody

³⁶ The property may be available for use by everyone.

³⁷ Several fundamental tenets define the CHM concept.

First, the commons area beyond the limits of national jurisdiction I not subject to national appropriation, since presumably it is owned by all.

Second, common spaces under a CHM regime must be used exclusively for peaceful purposes.

Third, scientific research must be free, open and not damaging to the environment. Benefits of such scientific research should go to all humankind, not just to particular governments.

Fourth, economic benefits from a CHM regime must be shared with all peoples, as opposed to only certain persons, corporations, or governments. In the context, economic demands of developing countries suggest a certain redistributive justice implicit in CHM to ensure that greater benefits might be allocated to poorer countries.

Fifth, exploration, exploitation, and use of the commons must benefit not only present peoples but also future generations. The commons are considered areas to be held in trust for future use, not just regions to be exploited for present needs. (p. 33. Joyner, Christopher C., 1998)

³⁸ Under *res publica*, a commons area essentially becomes a public trust. This notion of *replica* being a public trust might find considerable appeal if applied to the Antarctic region.

Herein operate the principle of nonappropriation. CHM becomes the instrument of peace use and prudent management in the interest of all mankind. Common heritage essentially contains a trust underpinned by a duty to ensure integrity, protection, conservation, and transmission to future generation of that heritage.³⁹

The effectiveness of international law does not rest on morality.

Competing national interest and political pragmatism, especially in its international consensus decision making process, presents challenges to assure its prudent policies of environmental consequence, legal ideology and economic drives.⁴⁰

Antarctica not only lies beyond the limits of national jurisdiction, it also lies beyond the limits of any state's ability yet to demonstrate, define, develop, or enforce sufficient national jurisdiction to merit a valid claim to title over territory.⁴¹

No compelling argument can justify jettisoning the fundamental requirements for territorial occupation on account of extraordinarily harsh environmental conditions. This remains the case for the Sahara Desert, the Arctic, and the island of Greenland. It should remain the case for the continent of Antarctica as well.⁴²

Managing a global commons area requires financial resources. Treating the environment as a never-wasting asset with infinite value makes it difficult to meet costs and attract political support to protect and conserve a commons area. The cost versus benefits ratio of a commons area's exploitation must be weighted and choice deliberated. This has been the pattern generally followed by governments involved in managing activities in the Antarctic.^{43 44}

The Antarctic Treaty System and its legal regime are not static; they experience change, growth, and decay. The ATS can mature, adapt, and evolve; or failing that, it can stagnate, resist, and decay.⁴⁵

³⁹ p.40, Joyner, 1998

⁴⁰ It is propelled by consideration of national interest and political pragmatism. Thus, the political process for producing an international consensus of values remains crucial for devising appropriate policy means to address global commons issue. In short, commons area will be better protected by prudent policies of environmental reason and legal obligation than by an economic ideology driven by aspirations of redistributive justice. (p.39, Joyner, 1998)

⁴¹ p.47, Joyner, 1998

⁴² p.52, Joyner, 1998

⁴³ p.37, Joyner, 1998

⁴⁴ The ultimate level of analysis is not the individual state; rather, it must be the planet. This permits the scope of these problems to be more accurately accessed and implementation of global solutions to be more adequately addressed. (p.37, Joyner, 1998)

⁴⁵ p.95, Joyner, 1998

3.3.1 The downside

The risk of conflicts is diminished and international scientific cooperation in Antarctic can proceed independently of the different political view of the Contracting Parties.

In the absence of genuine cooperation and actual enforcement, prevailing strategies by users are inclined toward misuse, and eventually abuse, of the commons area. If global commons are to remain economically productive, they must remain environmentally solvent. To that end, regimes must be devised and effectively implemented for the sustainable management of those areas.⁴⁶

The status of Antarctica as part of the global commons has, until recently, been largely ignored and undervalued. The Antarctic still warrants serious policy consideration and focused geopolitical attention. These considerations make the future of Antarctica and its circumpolar seas a salient consideration for contemporary, world politics, as well as for sustaining the environmental integrity of the planet.⁴⁷

The effectiveness of any international agreement depends heavily on the implementation measures taken by the Contracting Parties to that agreement.

However, the protection of the Antarctic environment has special characteristics that place the responsibility of the Contracting Parties to the Protocol in a somewhat specific perspective. Most other international and regional agreements regarding the protection of natural areas and species of flora and fauna require the Contracting Parties to take measures – including the adoption of legislation – to protect particular natural area or species within their territory.⁴⁸

Free access to a common area is not necessarily beneficial. In fact, open, unregulated access, especially if resource exploitation were freely undertaken, might quickly desecrate a commons area or deplete its living resource. Consider ocean dumping or air pollution, as well as the plight of whales during this century.⁴⁹

3.4 Lesson Learns and forces:

The most serious environmental threats within the Antarctic Treaty area come from the logistical activities that support scientific research. Transportation, handling and use of fuels, and waste disposal are essential for the logistics

⁴⁶ p.24, Joyner, 1998

⁴⁷ p.52, Joyner, 1998

⁴⁸ p.18, Bastmeijer. 2003

⁴⁹ p.52, Joyner, 1998

system, but they continue environmental hazards.⁵⁰ (See appendix: Human activities and Waste Management)

Enforcement often is done through diplomatic pressure at ATCMs, which often occurs more informally than formally. The ATS thus operates through methods of persuasion rather than compulsion, through education among its governments about ATS regime norms rather than by punitive sanctions when a breach occurs.⁵¹ (See appendix: Cases)

3.4.1 NGOs

The involvement of the public in the application and enforcement of the domestic Antarctic legislation is also examined. Public involvement is recognised as an important issue in the broader context of international environmental law and policy, environmental agreements.⁵²

International acceptance has been a key issue for NGOs in the contemporary global order. Aligned with development in social activities and information advance, NGOs monitor the progression movements⁵³, protecting and representing environmental interests^{54,55}, collecting and sharing information⁵⁶, advocating reform⁵⁷ and educating the public.

They help to legitimate processes and outcomes; to provide information; to contribute regime maintenance; to represent interests and to advocate reform.

3.4.2 Missing Information: Arctic and Antarctica

Monitoring of changes in the Arctic is also high priority. In regards to the assessment of climate change, stratospheric ozone depletion, and ultraviolet radiation, many international organisations have emphasized the importance of the Arctic in understanding these processes. Moreover, these global atmospheric changes are likely to be most pronounced in the polar region. This emphasis on the Arctic needs to be reinforced, especially considering the current lack of information about Arctic processes. (See Appendix: Signs of Climate Change)

⁵⁰ p.201, Joyner, 1998

⁵¹ p.110, Joyner, 1998

⁵² p.27, Bastmeijer, 2003

⁵³ Concern over possible harmful effects in the Antarctic by tourist activities has fostered noteworthy efforts at self-policing within the tourist industry. In August 1991 the International Association of Antarctica Tour Operators (IAATO) was formed by the seven commercial tour operators that were responsible for carrying most tourists to Antarctica.

⁵⁴ The purpose of IAATO is “to advocate, promote and practice safe and environmentally responsible private sector travel to the Antarctic” and to promote closer industry cooperation.

⁵⁵ <http://www.lastocean.co.nz/>

⁵⁶ The Scientific Committee on Antarctic Research (SCAR) is the sole international institutional body used by the Agreed Measures to analyse data exchanged between the parties

⁵⁷ The tourist industry is reluctant to accept international, or national, regulations, but the IAATO code of conduct only suggests and urges. The code is a list of guidelines for operation in the Antarctic that neither aggregate enforceable facts nor furnishes binding obligations with punitive costs attached.

Another problem concerns how to calculate the cumulative environmental impact of tourist activities in the Antarctic. Baseline information must be acquired before a comparative assessment can be made.⁵⁸

Environmental monitoring has become fundamental to both science and conservation in the Antarctic. Monitoring suggests that scientific activities have caused considerably more disturbances to the Antarctic environment than have tourists. Degradation from scientific activities is often justified or overlooked as an inevitable consequence of an activity, or considered as acceptable because of the great value of the science being conducted.⁵⁹

4.0 Considerations

4.1 Time, Technology, Information, Compliance and Education.

Revenues from tourism and political influence from environmentally sensitive tourist may furnish useful media for promoting the cause of conservation in the Antarctic commons. There is a salient political dimension to tourism. The political basis for costly Antarctic science is widely recognised and often explicitly acknowledged in national program policies.⁶⁰

It is inevitable that growing participations will foresee conflicts and arguments.

While most of the damages still occur in human activities, regulating proper code of conduct, given comprehensive guideline, framework and information analysis should present viable solution from wrongdoing behaviour.

Communicating appropriate measures among parties will definitely enhance understanding what is needed and what is not. Based on this, simulations for workshop, manuals, technical trainings are useful tools to communicate interested individual / industries / states.

Positive behaviours should be to encourage rather than finger pointing. The current "no-blame" culture sustains its balance; however, highlights the need to strengthen monitoring system.

Considering NGO, Government, Expert groups to remain open communications; whereas adopting open-source concept to leverage information system for the purpose in communication, cooperation enhancement and remedy discussion in the objective of Antarctica. Maintaining positive momentum in Antarctic conflicts is still the ultimate goal to align with its strategic objective – peace.

⁵⁸ p.215, Joyner, 1998

⁵⁹ p.215, Joyner, 1998

⁶⁰ p.216, Joyner, 1998

Under Antarctica Treaty System, philosophically, Time, Technology, Information, Compliance and Education are the currencies to safeguard its three purposes in Antarctica regime.

This review proposes the most naïve schedule plan to, hopefully, achieve continuity and environmental awareness in “Antarctica”

Short Term	<ul style="list-style-type: none"> • Encourage Public participating and collective behaviour • Openness; Soliciting Solutions and inductions • Discourage heroic behaviour / individual achievements
Mid-term goal	<ul style="list-style-type: none"> • Facilitating Change Management through information sharing and education.
Long term scope	<ul style="list-style-type: none"> • Ensure Compliance effectiveness • Data Profiling and Risk Management • Creating Antarctic Value

The plain hope is that science and tourism work symbiotically to educate and improve knowledge. In the Antarctic both activities can go forward, with neither suffering at the hands of the other.⁶¹

Last but not the least, if these decision-makers are willing to make cooperation and compliance happen, both the efficiency and legitimacy of the regime will be able to achieve those three representing pillars – peaceful purpose, freedom of scientific research and natural reservation.

⁶¹ p.216, Joyner, 1998

Appendix: Human Activities & Waste Management

Human activities in Antarctica bring potential environmental problems. Such problems may be magnified as more scientific activities increase pressure on the continent

Effective management and protection of the Antarctic environment are not possible without the understanding lent by Antarctic science. But the growth in human activities that can disturb or damage the Antarctic environment presents science with new challenge in environmental management. Human disturbance is caused by the exploitation of resources and impacts caused by the human presence, especially when concentrated in small areas.⁶²

An appropriate response to these developments thus requires greater scientific analysis of the Antarctic environment. To this end, priority research objective for environmental management might include: developing an effective baseline monitoring system; establishing key sites and species conserved within an enhanced protected area network; developing regional environmental plans and implementation for major station areas; adopting improved environmental impact statement procedures for scientific sites and operations; introducing an effective code of conduct for regulating tourism and private expeditions; and improving training of personnel and deployment of environmental officers at main stations and field sites.⁶³

Waste management today in the polar South ultimately aim to:

- (1) remove solid wastes from Antarctica;
- (2) phase out open-air burying and dumping of waste;
- (3) end the disposal empty fuel drums⁶⁴

Tourism usually causes environmental harm via one of three activities:

- (1) shipboard observation, which involves cruising or anchoring at various sites and looking for whales, seals, and seabirds;
- (2) small boat operations, such as ferrying group ashore in zodiacs; and
- (3) land excursions, such as visits to research stations and wildlife areas not inhabited by humans.

⁶² p.200, Joyner, 1998

⁶³ p.201, Joyner, 1998

⁶⁴ p.201, Joyner, 1998

Appendix: Cases

In 1985 the French decided to build an airport at Point Geologie, in Adelie Land, just offshore the continent. In the process of doing so, they destroyed penguin rookeries on islands that were blasted away for the runway. No punitive measures, formal or informal, were taken against that French.

To celebrate the occasion the Chinese brought in several doves, a species not indigenous to the Antarctic, which were released on the continent to inaugurate the station. Some Chinese also brought their pet dog to Antarctica, and others were seen kicking penguins around as footballs for sport. National station administrator from neighboring bases undertook low-level, informal consultations with the station director of the Chinese facility and informed him of the wrongdoings.

The point here is plain: Compliance with conservation norms is treated as an educative process. Norms and rules in the ATS regime are not viewed by member states as black-or-white situation that give cause for punitive sanctions.

During the 1980s, Soviet fishermen failed to provide accurate data on fish and krill catch counts

His Soviet attitude nixed the consensus needed in the CCAMLR Commission for adoption of those measures. Russia could now measure the cost of obstructing CCAMLR economically, as aid desperately needed from the West could be held as a bargaining chip against Russia's actions in the Commission meetings.

The ATS practice here is clear: Heavy-handed diplomatic punishments or sanctions are not the preferred means of inducing compliance with rules and norms in the Antarctic Treaty System regime. (p.110, Joyner 1998)

Appendix: Signs of climate change⁶⁵

Climate change will not be evenly distributed over the globe. Its effects are likely to be greater in some areas and less significant in others, but current understanding of global climate patterns is insufficient for making reliable regional predictions.

Observations are not always completely comparable over time and trends are not therefore hard to determine. Moreover, it is almost always impossible to tell whether any observed changes are related to global warming or are not part of natural variations.

IPCC draws conclusion from current climate change impact as follows⁶⁶:

- High latitude climate is sensitive to change
Sea ice is critical to energy exchange between ocean and atmosphere
- Temperature records point to both warming and cooling
- Precipitation has increased
- Cores of ice tell of dramatic climate history

Future impacts include⁶⁷:

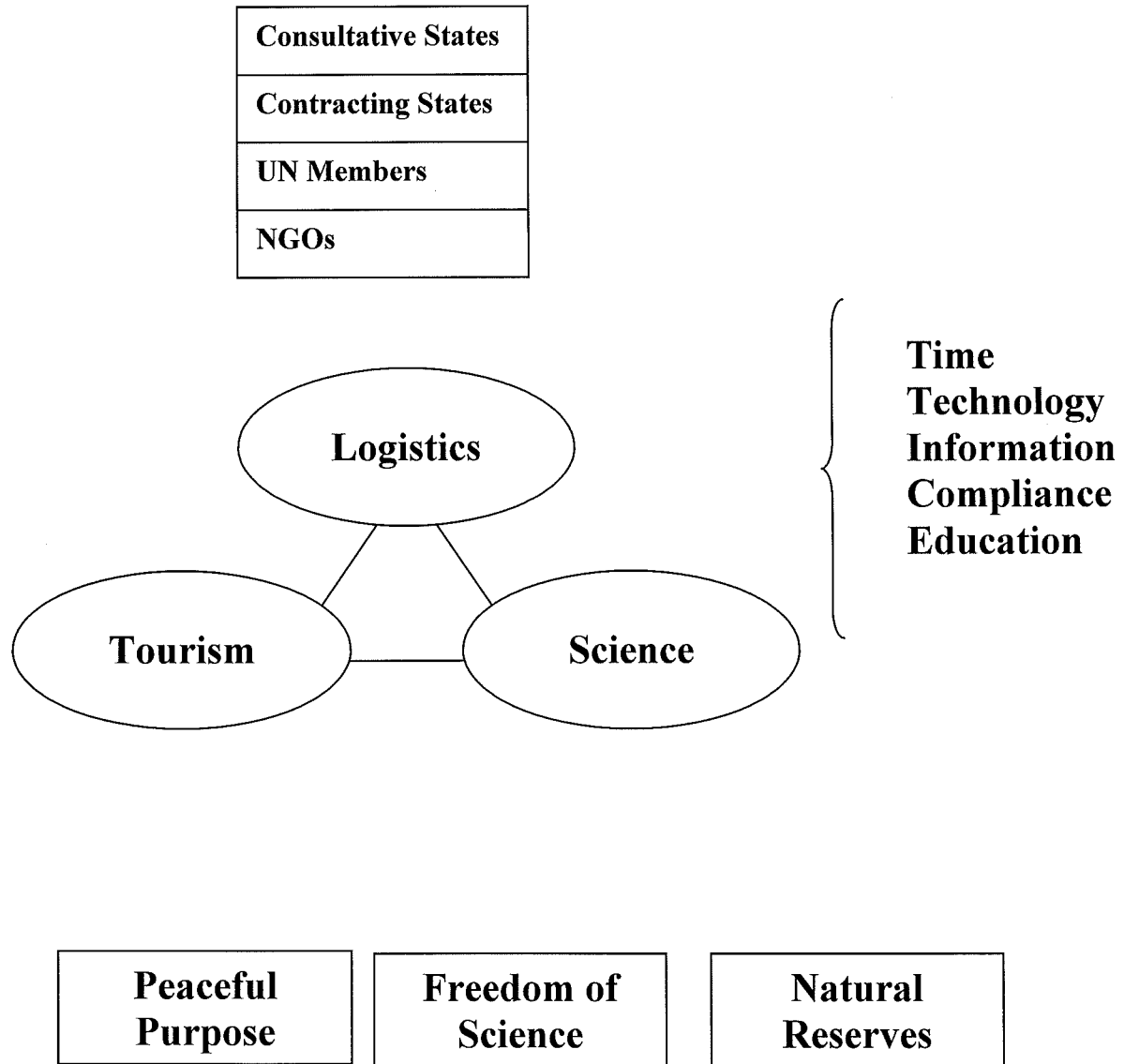
- Melting ice caps and warmer water raise sea level
- Winds and water currents are likely to change
- Higher temperatures could disrupt permafrost
- Warmer soils may enhance nutrient cycling
- Southern invaders might out-compete native species
- Animals are sensitive to changing food supplies
- Lakes and ponds will have a longer growing season
- Northern fisheries will benefit from warmer seawater
- People depend on stable climate

⁶⁵ P.160, "Arctic Pollution Issues: A State of the Arctic Environment Report", Arctic Monitoring and Assessment Programme, 1997. (<http://www.arida.no/amap>)

⁶⁶ P.160, "Arctic Pollution Issues: A State of the Arctic Environment Report", Arctic Monitoring and Assessment Programme, 1997. (<http://www.arida.no/amap>)

⁶⁷ P.162, "Arctic Pollution Issues: A State of the Arctic Environment Report", Arctic Monitoring and Assessment Programme, 1997. (<http://www.arida.no/amap>)

Appendix: Antarctic Concept Mapping



“Arctic Pollution Issues: A State of the Arctic Environment Report”, Arctic Monitoring and Assessment Programme, 1997. (<http://www.arida.no/amap>)

“Antarctic Treaty System : *An Assessment* “, Polar Research Board, National Academy Press, 1986.

Bargagli, R., “Antarctic Ecosystems: *Environmental Contamination, Climate Change, and Human Impact*”, Springer, 1998.

Bastmeijer, K., “The Antarctic Environmental Protocol and its domestic legal implementation”, Kluwer Law International, 2003.

“Guidelines for Environmental Impact Assessment in Antarctica”, ATCM, 1999.

Hall, M. C. & Saarinen, J., “Tourism and Change in Polar Region: *Climate, environments and experiences*”, Routledge, 2010.

Herber, B. P., “Protecting the Antarctic Common: *Problems of Economic Efficiency*”, The University of Arizona, 2007.

Joyner, Christopher C., “*Governing the frozen commons: the Antarctic regime and environmental protection*”, the University of South Carolina Press, 1998.

Kasper, W., “Human Progress – and Collapse? *A review of Jared Diamond’s Collapse: How Societies Choose to Fail or Succeed*”, New Zealand Business Roundtable, August 2005.

Lorey, D. E., “Global Environmental Challenges of the Twenty-First Century: *Resources, Consumption, and Sustainable Solutions*”, Scholarly Resources, 2003.

“Antarctica Regional Report: *Regionally Based Assessment of Persistent Toxic Substances*”, United Nations Environment Programme Chemicals, 2002.

Strokke, O. S. & Vidas, D., “Governing the Antarctic, the effectiveness and legitimacy of the Antarctic Treaty System”, Cambridge University Press, 1996.

