

## **2032: Juche-Oriented Environmental Futures**

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During the reign of Kim Jong Il, strategies and projects focussed upon environmental development in North Korea were often claimed to incorporate elements of a developmental approach rooted in paradigms of conservation and preservation. The DPRK's environmental focus has moved towards floral and faunal conservation, growth in an interest in low-carbon and alternative forms of electricity generation, and agricultural development based on organic models. Environmental aspects have even begun to play an important role within the narratives of legitimacy and presentation through which the institutions and ruling dynasty derive support and justification. This paper, given recent developments in environmental matters, will attempt to ascertain whether a determination of future directions for North Korean environmental policy under the rule of Kim Jong Un is yet possible. It will do so by engaging in an analysis of how such a direction might affect current or contemporary projects and themes within North Korea's environmental practice. Lastly, this paper will engage in a degree of speculative, futurological analysis and prediction as to where such themes might place North Korea and its environmental sector in twenty years time.

**Key words:** Environmental Issues, Ideology, Pragmatism, Economics, Legitimacy, Presentation/Propaganda.

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### Introduction

Development and management of the natural world, the resources derived from it and policy strategy relating to environmental utilisation have long been an important part of North Korea's approach to what might be described as 'revolutionary' industrial/economic development. The historical narratives of the DPRK feature the adoption of environmental strategies derived from paradigms of imposition or transformation, as well as those sourced from a recognisably conventional application of models of central economic and industrial planning, an approach shared with many other 'socialist' economies. Since the collapse of the Warsaw Pact and the crisis/famine period of the early 1990s, the DPRK has attempted a reconfiguration of its environmental approach and practice sourced from those foreign institutional actors with whom it engaged during that period of economic and political flux.

During the reign of Kim Jong Il strategies and projects focused upon environmental development in North Korea were often claimed to incorporate elements of an approach rooted in a paradigm of conservation and preservation. Politico-legal frameworks governing relationships between its institutions and the natural world have been rewritten along lines more acceptable to the developing external environmental consensus. We have seen the development of floral and faunal conservation, a growth in interest in low-carbon and alternative forms of electricity generation and agricultural development based on organic models. Environmental aspects have even begun to play an important role within the narratives of legitimacy and presentation through which the institutions and ruling dynasty derive support and justification.

This paper will consider, given the recent development in environmental matters, whether it is yet possible to determine a future direction for North Korean environmental policy under the rule of Kim Jong Un. If a distinct direction is apparent having undertaken such an investigation, it will attempt an analysis of how such a direction might affect current or contemporary projects and themes within North Korea's environmental practice. One such theme might be, given North Korea's recent success in obtaining the registration of 'Hamhŭng Hydropower Plant Number 1' within the UNFCCC's CDM process, the future place of the exploitation of such environmentally based financial instruments within its economic planning, and the impact this might have on diplomatic/political approaches by external actors. Lastly, developing this investigation of contemporary circumstances, the paper will engage a degree of speculative, futurological analysis and prediction as to where such themes might place North Korea and its environmental sector in twenty years' time. Could academics and economists of 2032 see North Korea as an important, intentional beneficiary of new low/no carbon economic realities, a place of developing floral and faunal biodiversity based on an expert conservational approach, or a valuable producer of organic or bio-dynamic produce?

I suggest that contemporaneous developments in the political, ideological and institutional relationships with the environmental realm might give a futurologically minded enquirer or investigator potential possibilities as to the future shape of these relationships. Such an investigation might also determine elements of the politico-geographic space created by such approaches and relationships. To support the grounds for such an investigation, this paper will introduce the historical environmental approaches undertaken by the DPRK, approaches which have generated the urban and rural space and environmental relationships present in

P'yŏngyang and the nation as a whole in recent years. Secondly, it will identify the environmental approaches taken by the contemporary DPRK, especially those generated by the strategic needs during the famine/crisis period and its immediate aftermath. One element of this more recent environmental approach has been its role within the DPRK's narratives of legitimacy, an approach that perhaps reached its apogee during the mourning/funeral period for Kim Jong Il. Thirdly, this paper will assess whether it is yet possible to determine a future direction for North Korean environmental policy under the rule of Kim Jong Un, commenting on the recent success of the DPRK's registration of projects under the United Nations Framework Convention on Climate Change's (UNFCCC) Clean Development Mechanism (CDM) process. The 'success' which is described in the introduction will serve as a pointer for the last section of the paper which addresses the future. Here I will speculate whether such success might direct or nudge the DPRK and its environmental sector in twenty years' time into a strategic direction resulting in its emergence as an important, intentional beneficiary of new low/no carbon economic realities. I will also investigate whether its current regional diplomatic initiatives relating to conservation might transform the DPRK into a locale for floral and faunal biodiversity and whether the same economic influences that have driven its engagement with the CDM process might result in a DPRK in twenty years' time that is an emerging or valuable producer of organic or bio-dynamic produce.

### **Historical Environmental Approaches of the DPRK:**

#### **1. Initial Capacity/Infrastructural Development in the Post-Korean War Era**

In my research, I have adopted a periodic approach towards understanding and analysing the historical narratives of environmental and developmental management. Such narratives may be categorised into major periods in North Korean history and within them a number of sub-periods, forming a response to particular geo-political or environmental events or themes.

The periodisation of the DPRK's environmental approach starts, as with much else in its history, with war. Bruce Cumings describes the Korean War as having left a scorched earth in its wake. Within P'yŏngyang some 93 per cent of all buildings had been destroyed and there had been an enormous level of damage and destruction done to the environment of the DPRK.<sup>1</sup> Much of the industrial and agricultural infrastructure which had been put in place by the colonial Japanese administration had been destroyed, and the DPRK found itself a blank slate, needing to rebuild and reconstruct much of its agricultural and industrial base and to rehabilitate much of the natural environment.<sup>2</sup> The infant DPRK gained much technical expertise from both the USSR and the PRC for the rehabilitation of the natural world and environmental development, which included the intellectual/ideological influence of Stalinist-era central planning.<sup>3</sup> Kuark describes the DPRK's agricultural policy of the time as having only two primary goals, 'the swift reconstruction and rehabilitation of the war-shattered factories making agricultural implements, and of farms and irrigation systems so as to increase grain production and meet the pent-up demand for food', and secondly the rapid socialisation of agriculture by means of collectivisation.<sup>4</sup> Although very little consideration was given to environmental matters during this period, wide-scale transformative reclamation of virgin land or the destruction of forests appears not to have taken place. Instead developments which might be categorised as improvements and extensions to already industrialised agricultural land focussed on increasing the levels of industrial production. It is in fact quite difficult during this initial period to see a distinctly native or local ideological approach to environmental or agricultural development. Kim Il Sung's statement from 1956 that 'Rice is immediately socialism. We cannot build socialism without rice'<sup>5</sup> resembles many rhetorical flourishes during this period of his rule.

## 2. Great Leap Forward-influenced Policy

The initial developmental and environmental approach focused upon rehabilitation and rapid capacity-increase was short lived. Upon the death of Stalin and the solidification of the power of Nikita Khrushchev as Soviet Premier, a process of radical and abrupt geo-political change began that would have a direct impact upon such environmental strategies. Khrushchev's 1956 'Secret Speech' denouncing Stalin, and a document in April entitled 'On the Personality Cult in the DPRK' which heavily critiqued the political strategy of Kim Il Sung forced a shift in diplomatic and political positioning within the Warsaw Pact. This breakdown in relations between the USSR and China became known as the Sino-Soviet split. On the part of the DPRK there was a rapid political and diplomatic movement away from the USSR.<sup>6</sup> This tumultuous period for the DPRK also created the political and ideological space for a revision of internal policies towards the natural world which in the end would enable a distinct 'Juche-oriented' environmental strategy to emerge.

Building upon approaches developed during the Great Leap Forward in the People's Republic of China with the urgency of Yundong and revolutionary speeds and models, the Ch'ollima Movement was launched in 1958,<sup>7</sup> which was the first of a number of categories of 'revolutionary urgency' within the DPRK. However, in the North Korean context, the urgent and transformational approach of the 'Great Leap Forward' was less overt. Kim Il Sung refused at the time to engage in gargantuan projects such as the draining of lakes or the wide-scale demolition and terracing of mountains. Rather the Ch'ollima approach focussed upon a smaller scale of development which quickly abandoned the radical collectivity of the Chinese model. He may have chosen this path perhaps because he was aware of the impending and obvious failure of much of the Chinese policy, issues of labour supply within the DPRK and the general size of the population, as well as the danger of large groupings of people.<sup>8</sup> Although some of the dramatic rhetoric appears to have rubbed off in the title of Kim Il Sung's 1964 work 'Let's Make Better Use of Mountains and Rivers', industrial and environmental development within the DPRK was not achieved through the radical reconstructing of mountainsides, but instead on a more technocratically-minded and practically focussed regime of resource utilisation.

## 3. Technocratic/ Indigenous Approaches to the Development of the Environment

The period of ferment created by the Sino-Soviet Split and the 'Great Leap Forward' forced North Korea to begin the development of a relatively indigenous approach to agricultural and environmental productivity. Kim Il Sung's *Theses on the Socialist Rural Question in Our Country*<sup>9</sup> gives a grounding in the role of the environment within the wider context of the industrial and agricultural strategy of the DPRK, and the practical policies to be followed within that strategy. Within the *Theses*, Kim lays out an ideologically cohesive, sound and locally sensitive approach to agricultural and environmental development. Environmental management and improvement was to be achieved through the functioning of the 'Three Revolutions Movement' within the landscape itself in which a new ideology would be applied to the practical management of the environmental and agricultural realm through a reconfiguration of the concepts and strategies relating to the technical, cultural and ideological aspects of environmental development. The *Theses* also called for a hierarchical organisation of agricultural production according to the following pattern: peasantry over the urban working class, agriculture over industry and the rural over the urban, the full incorporation of industrial management practice into the agricultural and rural economy, and lastly the collectivisation of rural ownership. The *Theses* call for the development of

agricultural and natural landscapes to follow the same strategic system as that of urbanised industrial areas, not just to achieve the goals of the ‘Three Revolutions Movement’, but also to further the wider revolutionary aims of Juche. He says that ‘in order to eliminate the distinctions between the working class and the peasantry, it is necessary to rid the countryside of its backward state in technology, culture and ideology’.<sup>10</sup> Here we see, perhaps for the first time, the beginning of a real systemisation of political ideology focused on the environmental systemisation which led Peter Atkins of Durham University to describe ‘the landscape of the DPRK ... [becoming] ... an outcome or a by-product of socialism but also a key medium through which society is transformed’.<sup>11</sup> The technological revolution called for in the ‘rural theses’ led to a rapid and wide-scale revision of agricultural practice, within five key areas. These were 1) the expansion of irrigation and the water supply, 2) the electrification of the countryside and rural areas, 3) land ‘realignment’ so as to incorporate mechanised agricultural processes, 4) the increase in the use of chemical fertilisers, and 5) the reclamation of tidal lands and swamps to create more land for agricultural production.

#### **4. The ‘Arduous March’ Era: Emergency Environmental Strategies**

The institutional approach governed and directed by the ‘rural theses’ held sway over the DPRK’s environmental and developmental approach for many years. The inbuilt destabilising supply and cost issues which disrupted many a central plan in the Warsaw Pact<sup>12</sup> eventually made the approach unstable and it was abandoned at the Party Congress of 1980. The more ad-hoc and reactive environmental approach of the 1980s also collapsed at the moment of the Warsaw Pact’s collapse. Political and academic narratives surrounding North Korea and Juche thinking today generally assert the developmental and environmental policies of these previous eras as having categorically failed, citing the famine and crisis conditions that occurred between 1992 and 1997, but also less dramatic subsequent events. Within the environmental field however a ‘perfect storm’ of contributing factors cannot be ignored. These included environmental impacts such as serious droughts in the early 1990s which reduced harvest levels, and intense and sustained rain fall in 1994 which further reduced harvest levels and damaged agricultural land.

Faced with a disastrous set of environmental circumstances and radical changes in the geo-political possibilities for seeking help to deal with them, the DPRK next adopted some radical survivalist strategies. In 1992 the Russian Federation and the Commonwealth of Independent States, the successor bodies to the USSR, informed North Korea that all future trade was to be at world market prices, and (even worse for a country with virtually no hard currency reserves), they had to pay by cash in advance of delivery. Within the year Kim Il Sung announced what was known as the ‘Let’s Eat Two Meals a Day Campaign’, presaging the famine that was to come. In the field of environmental management, strategies were also abruptly changed.

As an emergency solution to the crisis, the authorities within the forestry sector abandoned the policy of decades in an attempt to create more land area for the cultivation of basic crops. It was announced that ‘the Ministry of Land Management and Environmental Protection ... sanctioned deforestation, in order to produce crops on the marginal land, especially on sloping land’.<sup>13</sup> Internal documents and data from the DPRK on the extent of such deforestation are not forthcoming, but external studies undertaken by United Nations agencies after 1995, the peak year of disruption, note the impact of this change in policy. Bobilier records the results of the UNDP/FAO investigation which concluded ‘that more than

500,000 hectares of marginal lands were deforested and cultivated'.<sup>14</sup> Recent FAO reporting has asserted, utilising statistics sourced through the FAO STAT system, that forestry cover in the DPRK declined in total from some 8.2 million hectares in 1990 to 6.8 million hectares by the year 2000,<sup>15</sup> that is, nearly a fifth of the nation's total forest cover was removed in a decade.

### **5. Adjusting to New Realities and a New Era: Encountering/Incorporating Foreign Environmental Ideologies and Philosophies**

There is no doubt that this era of environmental disaster and geo-political transition was extremely challenging for the DPRK. Much of the research literature that focuses on the possibility of its collapse, dissolution, and eventual reunification with the Republic of Korea (South Korea) derives from the seeming inability of its institutions and leadership to respond at the time with meaningful or positive solutions. In the midst of this tumultuous period, however, I would claim that it is possible to discern the development of new institutional responses to environmental failures within the DPRK and a developing ability of bureaucratic and ideological forces to mitigate such failures. One could categorise such developments as paradigms of conservation and preservation for environmental management.

The route for such a development is both interesting and for most people entirely unexpected, though perhaps for seasoned DPRK watchers not that surprising. If we can remember the triangular approach that North Korea took to coping with the geo-political shifts during the Sino-Soviet Split era and the nimble ideological and practical footwork undertaken by the DPRK as the difficulties with the 'Great Leap Forward' in China became clear, it cannot be surprising that north Korea attempted similar triangulations in order to adjust to an era in which it had even fewer political allies, and virtually no economic or practical support.

In order to extract itself from the period of crisis and disaster, the DPRK was forced to ask for help from outside agencies such the World Food Programme, the UN Development Programme (UNDP), the Food and Agriculture Organisation (FAO), and the International Committee of the Red Cross. The DPRK authorities are regarded by many scholars (such as Woo-Cumings, Eberstadt and Noland) as having utilised these organisations to their own advantage despite having being beset by crisis and potential regime collapse. Noland, Robinson and Wang say that 'these floods played an important public relations role inasmuch as they facilitated the North Korean Government's portrayal of the famine as a product of natural disaster'.<sup>16</sup> Although I do not aim to contribute to the debate surrounding the veracity of the DPRK's claims, nor whether outside agencies and other NGOs have been subject to institutional exploitation by the DPRK, I believe that it is undeniable that the entrance of Western institutional actors into the role of funders and supporters of some aspects of North Korean governmental framework has enabled it to develop its institutional capabilities and equip itself with some of the bureaucratic and ideological tools needed to survive in the post-Soviet and post-famine eras, and which focussed its ideological direction towards a rapidly developing environmental and conservational institutionalism.

### **The Environmental within the Funeral/Commemoration of Kim Jong Il**

Led by the need to connect with the themes of conservation and environmental protection espoused in the wider world, the environmental and the natural have increasingly begun to play a key role both in terms of economic productivity/possibility and supportive legitimacy within the DPRK. Perhaps the most overt and noticed exemplars of the DPRK's developing environmental approach was an environmental element within the mourning/funeral

process for Kim Jong Il. The *Rodong sinmun* newspaper stated that ‘Bears live in deep forest and sleep in a burrow in winter. That day, however, the bears appeared on the road in the daytime, on which Kim Jong Il took his way, and roared for a long time. It was really mysterious...even beasts seemed to cry with sorrow for the demise of the heaven-born great man.’<sup>17</sup> The *Rodong sinmun* is here reporting one of a number of intriguing events that according to North Korea’s media occurred during the period immediately after the death of Kim Jong Il. Some of these events were picked up by media outlets in the wider world, such as the BBC and even the *Daily Telegraph*, and were presented for the curious value that such reportage represents. The prospect that bears, owls, and cranes might even notice the death of Kim Jong Il appears a slightly spurious or tenuous one. However, it points to a vital element in the usage of the environment and the natural world within the DPRK, namely legitimacy, the legitimization of the regime.

Pronouncements surrounding grieving and distraught cranes and magpies, dead birds and cracking ice on Mt Paektu,<sup>18</sup> all form part of a cohesive and comprehensive strategy of internal legitimation presentation, in which the natural world is incorporated within the same framework as the more conventional, human citizenry of North Korea. Therefore not only is the natural world subject to the same demands of loyalty, honorific glorification and grief (as in the case of the death of Kim Jong Il), but they also possess the same ‘natural’ desire as humans to support and celebrate the manifestation of national perfection represented by the Kim family. This narrative strategy is not only directed at an internal audience, but also at regional environmental forums to which the DPRK belongs where it is used to assert the legitimacy of the DPRK. The prospect of North Korea as an environmental lodestar may be difficult for ‘cynics’ to accept, but it is one which must be useful in some way to those responsible for its transmission.

### **Success under Kim Jong Un within the UNFCCC/CDM Process**

Within the DPRK’s institutional framework, there is perhaps only one element more vital than legitimacy usefulness when measuring the validity of this approach - the capacity for generating economically exploitable goods, especially hard currency. Following the acceptance of the external world’s environmental strategies and agenda after the period of the ‘Arduous March’ as well as the development of narratives of legitimacy focussed on the environment, the DPRK has been engaging with the economic possibilities presented by the environmental sector, primarily some elements of the environmental infrastructure put in place by the Kyoto protocol and the Intergovernmental Panel on Climate Change’s CDM system. Therefore, to me this recent development in the DPRK’s environmental approach at the start of Kim Jong Un’s rule is the most important development so far.

The DPRK’s Ministry of Land and Environmental Protection published its first ‘National Communication’ on climate issues in the year 2000<sup>19</sup> and was the 149<sup>th</sup> nation to ratify the Framework Convention on Climate Change on 27 April, 2005. Since that date its institutions have been attempting to extract what, apart from the legitimation or positive narrative aspects, is the primary advantage to be gained from its signing, namely the financial return open to it through the ‘carbon credit’ element of the CDM system.

As a comparatively small nation punching way below its theoretical weight in terms of carbon emissions, the DPRK would be in a good position to extract financial advantage or leverage from the CDM. However in order to do so it must participate as a sovereign actor; it must be fully engaged and adept at the sort of bureaucratic expertise and justificatory

practice which is a hall mark of modern capitalistic social democracies and their attendant corona of NGOs and other external actors.

North Korea has in the past not proven itself to be particularly well versed in the elements of such institutional practice and has had little previous success in its attempts at registering economic or developmental projects under the UNFCCC system. On 16 August, 2012 it was reported that the DPRK had succeeded for the first time in meeting the conditions of registration. The Hamhŭng Hydropower Plant Number 1 was the first carbon credit earning project within the DPRK's jurisdiction.<sup>20</sup> It has since been reported that five other projects have gained acceptance under the CDM scheme, including the Paektu-san Sŏngun Youth Power Station Number 2 and Ryesong-gang Youth Power Stations 2 and 4.<sup>21</sup> This was an enormous success for the DPRK authorities, though it is not known how the connection was forged with either the Czech Ministry of the Environment who serve as the external supporter and Topico Energia, a Czech Bio-Mass dealer to whom these credits have been assigned. It is perhaps not the financial success that it may at first seem. At the time of accreditation, the DPRK's accredited 158,496 tonnes of CDM reductions were worth only 364,540 euros annually on the open market until 2023 because the Certified Emission Reduction (CER) credits (derived from the CDM scheme) were worth 2.3 euros a tonne.<sup>22</sup> Directly they were worth even less, as the DPRK's emissions factor involved in the generation of figures for direct claims from the CDM process was only 0.59018 euros a tonne.<sup>23</sup> Therefore in total the credits were worth only 215,144 euros.

### **Future of the DPRK Low/No-Carbon Economics**

Such apparent paucity of reward for the DPRK under the current CDM accreditation process may not be the end of the story. The UNFCCC and CDM failed to set a decent and appropriate floor under a cap and trade schema around a useful and utilisable carbon trading market. This has been a widely examined, reported and contested process. Theoretically the CER credits should be worth 30 US dollars (23 euros) a tonne minimum.<sup>24</sup> This should generate nearly five million US dollars (3.8 million euros) annually for the DPRK. When this paper was written originally, it was widely held that the CDM and UNFCCC process was undergoing a slow collapse and would be replaced eventually by a system which took into account the need to set an appropriate minimum cost. Since then, complex pressures on the CDM system have forced the price of credits lower to a record of 31 euro cents in November, 2012,<sup>25</sup> and then to an all-time low of 1 euro cent a tonne on 23 April, 2013.<sup>26</sup> Understandably such a lack of value resulted in an almost complete collapse in trading. The main market recorded no trading on the 22 and 23 July, 2103.<sup>27</sup> Such lack of trading reflected the attempts by wider market participants to extract value from their carbon emission portfolio using non-UN accredited or more complex instruments such as Emission Reduction Units (ERU). Since that market low point, the CER market has recovered to 60 euro cents a credit.<sup>28</sup> This is still an extremely low and unsustainable level for the system as a whole, but it is recognised by participants and formulators that in the future it will be necessary to arrive at a more appropriate way of pricing a monetised system for carbon emissions and credits.

For North Korea, the most important part of this story is that it participated in the first stage process and (presumably since such a future system which functioned correctly could be financially very lucrative to it) it will be involved in the second stage of its development. The existence of a further four DPRK projects currently under assessment by the CDM Executive Board suggests that North Korea's institutions have not lost interest in the concept in spite of



the system's current instability and inefficiency. Intriguingly these projects are not focussed on conventional generation, but on approaches to emissions reduction such as methane from farm animals, and the more efficient use of street lighting.<sup>29</sup>

However even given the current lack of efficacy seemingly inherent within the CDM process, it is not the only element in the wider emissions trading network, and certainly not the only one from which a participant might extract financial advantage. There exists a secondary market in the CDM process's Carbon Exchange Framework (CEF) credit product which the DPRK could potentially exploit, as well as highly complicated financial instruments known as CAT bonds. CAT (Catastrophe Bonds) are exchange-traded insurance-based derivatives, based around the valuations of the cost of the types of disaster affecting certain nations.<sup>30</sup> There are generic CAT bond products relating to the risk of climate change impact upon hypothetical Pacific Island nations, as well as very specific bonds such as those connected to hurricanes which might affect Haiti or the Dominican Republic, or earthquakes hitting Japan. These bonds are traded on a market organised by the insurer Swiss Re known as the CAT Bond Total Return Index, and according to Bloomberg's latest forecast are currently outperforming the generic stockmarket by several percentage points.<sup>31</sup> There is also a secondary market in CAT bonds, a future's market in CAT bonds, and a composite market in which generic government-issued bond certificates are leveraged through a Default Swap mechanism with CAT bonds so that the possibility of a future or potential catastrophe begins to effect the value of a nation's more generic financial paper.<sup>32</sup> It does not need to be said that such financial instruments are highly complicated. However, they are no more complicated for the DPRK to access than the current CDM process. North Korea has previously shown a propensity to engage with financial instruments before, and in future accessing the CDM process as well as the more esoteric products such as CAT bonds and CEFs could well prove not only financially useful, but diplomatically productive.

Another element to the CDM process, especially as the DPRK has apparently chosen to focus its first applications within its electricity generation sector, is the export of energy from such accredited projects bringing with it the potential for the export of the DPRK's own advantage in carbon offsetting terms against the carbon dioxide production in other nations. This would allow the DPRK to charge a premium for electricity produced by such projects, and to further develop its hydropower and tidal power projects, perhaps by 2032 become a net exporter of electricity, supporting the PRC in offsetting its rapidly increasing carbon emissions and in meeting its post-Kyoto targets.

### **Floral/Faunal Biodiversity: Protection and Conservation**

Moving beyond matters of climate change and carbon trading, a further strategic element the DPRK might seek to exploit is the leveraging of its different and non-normative historical experience and developmental approach, even going so far as to exploit its developmental failures and economic collapse. According to the International Crane Foundation (ICF), a US-based conservation organisation, Red-crowned cranes used the Anbyŏn plain in Kangwŏn Province, North Korea, as a wintering destination since 'before recorded history until the late 1990s'.<sup>33</sup> The late-1990s decline and then total disappearance of the 240 birds that regularly migrated from Russia to Anbyŏn in late October until March or April could be directly attributed to the famine conditions in North Korea at the time. As starving people foraged and stripped the landscape bare to survive, no food sources remained for the cranes, which typically feed on small invertebrates in wetlands and leftover grains on fallow rice paddies. The cranes of Anbyŏn are currently the focus of the International Crane Foundation's

attempts at rehabilitating the regional environment, so as to attract migrating cranes back to their previous wintering habitat.

Organisations such as the Wildlife Conservation Society of New York in collaboration with the Russian Far Eastern Academy of Sciences and the DPRK's Academy of Sciences have also attempted to develop a framework for the conservation of the Amur Tiger populations, and possibly Siberian Tigers, whose ranges extend to or are local to the DPRK. Together these organisations have sought to protect the fauna of the Chinese border regions and the far north-west of North Korea, areas of little use so far as economically productive narratives are concerned to the DPRK, but highly valuable within the potential narratives of conservation and preservation.

Perhaps by 2032 the DPRK will have become as adept at leveraging its apparent biodiversity as it may have become in relation to its current low level of carbon emissions. Floral and faunal conservation worldwide attract grants and funding from a multiplicity of national, international and NGO agencies, and this alone could prove lucrative. There are possibilities surrounding eco-tourism within the Demilitarised Zone [DMZ] if North Korea could find some way around its differences with South Korea on the 'Green Capitalism' approach represented by the DMZ Peace Park Project. The DPRK has proven willing to open and exploit its landscape's tourist potential before, even in spite of difficult diplomatic relations, such as the case of tourism in Mt. Kūmgang and Mt. Paektu.

#### **Alternative Agricultural Approach: DPRK Organic Futures?**

Although the participation of the DPRK in the CDM process, or eco-tourism in the DMZ by 2032 may sound far-fetched and futurological in nature, to me it has the greatest developmental possibilities of all the aspects of environmental and landscape management. A key historical example would be the direction given by Kim Il Sung to the food generation capacity of the DPRK. He proposed the home production of enormous quantities of meat sourced from rabbits, who were to be fed on a food pellet made from lugworms. The rabbit food was the result of a twenty-year research programme. This strange and esoteric example is not unusual to researchers on the DPRK's approach to development.<sup>34</sup> As a by-product of the collapse of the Warsaw Pact, the DPRK has been forced to further adapt its agricultural practice and strategy, as it did with its industry and economic fields. Previous to the famine and the collapse of the communist trading bloc, the DPRK's agricultural sector was heavily industrialised, in fact one of the most 'chemicalised' approaches to the production of food on the planet. Since 1992, the DPRK has been unable to produce the fertilizer it needed to sustain such a system. Nor could it afford the fuel needed to maintain such production or to obtain the hard currency required to buy that level of fertilizer from other sources. The DPRK has had to find an alternative route for this production, the self-reliance of its citizenry and their rabbits not filling the gap.

External agencies and institutions with an environmental focus at the time of the famine, along with desperately needed supplies, brought with them a potentially longer term solution to North Korea's agricultural problem - low chemical or organic farming. There is now in P'yōngyang the Organic Agriculture Development Association [OADA], answerable to the DPRK Ministry of Agriculture, which runs some five model farms around North Korea. By 2005, these farms were producing over 10,000 tonnes of organic wheat and barley, and 8,000 tonnes of organic vegetables.<sup>35</sup> This association also aims to export North Korean organic pork, mushrooms and fruit to the European Union and has set up a dairy, managed on organic

principles, of some 1,200 cows whose milk it also seeks to export to the European market.<sup>36</sup> The UK, facing an acute shortage of organic milk due to a reduction in the number of dairy farms, is forced to import its organic milk from Poland. Perhaps by 2032 the DPRK will have developed its agricultural base to such an extent that it becomes a substantial exporter of organic produce to a developing Chinese market and further afield to the European Union.

Further to these agricultural aims, the OADA is seeking to develop the capacity for the production of bio-diesel in North Korea, aiming to produce over 28 million litres of bio-diesel in its first year. Whether the aims of the organisation are in any way realistic is of course another matter, but it is jointly funded by the European Union's International Environment and Education Extension Plan (IEEEP), and by the American Friends [Quaker] Service Committee.<sup>37</sup> There is also a joint project funded through Europe AID between the Dutch Foundation for Agricultural Research and the DPRK's Research Institute of Agrobiology which is seeking to develop ways of breeding disease resistance into seed potatoes so that North Korea might increase its organic potato production.<sup>38</sup>

### **Final Thoughts**

In this paper, I have sought to establish the intellectual ground so that the reader might, if seeking to engage in futurological thought or analysis surrounding the nature and potential of the DPRK and its environmental/agricultural productive capacity of 2032, recognise that in order to do so they must examine and imagine the future environmental or developmental potential of North Korea from the standpoint of its current reality. The future of the DPRK will not be one of grand utopian schemes, but will be far more prosaic, just as in the present the DPRK is not really a space of grand utopian possibility and fulfilment, but a reality far more 'conventional'. This future will be one in which productive capacity is harnessed to the possible and the exploitable, one in which the financially exploitable will be exploited, where every potential economic furrow will be ploughed and whatever advantage can be gained will be taken in order to survive and exist. In short, from this perspective, discounting any potential or unexpected collapse of its current order and system, the DPRK of 2032 will closely resemble that of 2012.

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### **Endnotes**

<sup>1</sup> Bruce Cumings, *The Origins of the Korean War*.

<sup>2</sup> Yoon Kuark 'North Korea's Agricultural Development during the Post-War Period', pp. 82-93.

<sup>3</sup> Jan Prybyla, 'Soviet and Chinese Economic Competition Within the Communist World', pp. 464-473.

<sup>4</sup> Kuark, op. cit., p. 83.

<sup>5</sup> Kim Il Sung, 'Rice is Immediately Socialism (Letter to the Chairman of the South P'yŏngan Provincial Party Committee), 28 January 1956', pp. 25.

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