### 1AC Agriculture

#### Advantage 1 is Agriculture

#### Status quo food production is failing—a shift to urban agriculture is key to sustainable food systems and biodiversity preservation

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URBAN AGRICULTURE Urban agriculture is a system that ensures food security by providing access to land and resources to support urban farming efforts.68 The United Nations Development Programme defines urban agriculture as follows: [A]n industry that produces, processes, and markets food and fuel, largely in response to the daily demand of consumers within a town, city, or metropolis, on land and water dispersed throughout the urban and peri-urban area, applying intensive production methods, using and reusing natural resources and urban wastes, to yield a diversity of crops and livestock.69 In the United States, urban agriculture is perhaps better known as community gardening.70 Community gardens are areas where residents grow food on publicly held or privately held land that they do not own.71 Most often, community gardens are located within neighborhoods, on public housing premises, or on school grounds.72 In the face of an imminent food shortage, especially in light of the economic and energy crises discussed above, it is imperative that urban residents expand urban food production. Neglected and abandoned vacant lots in blighted urban areas comprise a vast amount of land that could be converted into urban gardens.73 In addition to vacant lots, other urban areas including schoolyards, hospital grounds, parks and other open spaces, utility easements, alleys, rooftops, building walls,75 and even windowsills all provide opportunities for urban agriculture.76 While the many benefits of a sustainable urban agricultural system will be discussed below, additional benefits to urban communities deserve mention here. Urban gardens beautify and green urban neighborhoods while also building a sense of community.77 Urban gardens provide educational and employment opportunities, promote self-respect, and can even reduce crime rates.78 These gardens also offer urban residents an opportunity to connect with nature and can instill environmental ethics.79 Additionally, urban gardens promote entrepreneurship, as urban farmers can sell excess produce at farmers’ markets, through Community Supported Agriculture programs,80 and directly to restaurants.81 Finally, urban gardening provides lowincome urban residents with a supply of fresh and healthy organic food that can combat problems associated with inadequate nutrition, such as illness, fatigue, depression, anxiety, and hunger.82 IV SUSTAINABILITY Sustainability is best described as a concept of making decisions for the courses of action we choose in a way that balances the three “E’s” of sustainability—environment, economy, and social equity83 — as well as the lesser known prong of sustainability, national security.84 Sustainability is a big-picture concept. Our individual actions as well as local, state, and federal policies do not exist in a vacuum; every action has an impact on the world at large and on future generations. To create a truly sustainable world, all of our decisions, from individual choices to federal policies, must consider the impact on the environment, economy, society, and national security. Media coverage, marketing of consumer products,85 and recent documentaries have all contributed to bringing the terms “green” and “sustainability” into our everyday vocabulary,86 yet no clear definitions of these terms exist. While green focuses on protection of the environment, sustainability is much broader. In 1987, the World Commission on Environment and Development, in the Brundtland Report, defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”87 At a more fundamental level, sustainability can be defined as “able to be sustained,”88 where sustain means to “strengthen or support physically or mentally . . . [to] keep (something) going over time or continuously.”89 In this broader context, sustainability requires that we look at our current lifestyles and practices and evaluate their capability of being continued indefinitely. Much of the recent attention concerning sustainability focuses on technologies designed to reduce energy consumption and foster development of renewable energy sources.90 Little discourse has been directed towards the immediate impact individuals can have merely by reducing personal levels of consumption through a simplified lifestyle, yet such a reduction would yield immediate results and require little financial investment. As individuals, we can foster sustainability while increasing our food supply simply by providing more for ourselves through a sustainable urban agricultural system. Government incentives, discussed infra Part VII, provide land and resources that would enable individuals and communities to take action to transform our agricultural system into one that is both sustainable and secure. In the following sections, this Note provides an overview of each of the four elements of sustainability—environment, economy, equity, and national security. This Note also discusses modern industrial agriculture, urban development trends, and urban agriculture in terms of the elements of sustainability. A. Environmental Sustainability In the environmental context, sustainability encourages production and development methods that preserve and protect our natural resources and reduce our impact on the environment.91 This involves “protecting existing environmental resources (both in the natural and ‘built’ world), including the preservation of historical sites and the development of environmental resources and assets for future use.”92 To accomplish this goal, we must find innovative ways to reduce our consumption of resources and replenish the resources we do consume. We must protect biodiversity and ecosystems, as well as our land, air, and water resources by reducing greenhouse gas emissions, carbon footprints, air and water pollution, and soil contamination.93 In the context of land use and food production, environmental sustainability demands that we conserve undeveloped land and employ food production methods that will have a minimal impact on the planet. 1. Environmental Sustainability and Industrial Agriculture Industrial agriculture is a system in which economies of scale and maximization of profits are the ultimate goals.94 Profits are maximized when agribusinesses produce the largest yield of single crops at the lowest possible cost, primarily through mechanization and intensive use of agricultural chemicals.95 As discussed supra Part I, the environmental effects of industrial agricultural methods include soil erosion, depletion of soil nutrients, groundwater contamination from chemical inputs, and consumption of finite fuels.96 Additionally, as crop yields decline due to environmental degradation and demand for agricultural products rises due to population growth and the increased use of plant-derived biofuels, more and more land will be consumed by industrial agriculture. This will result in an agricultural system that depletes and destroys natural resources at an increasing rate, which will negatively impact the planet’s carrying capacity.97 Along with farm subsidies and corporate control of food production in the United States, policies that allow the harms of industrial agriculture to be treated as externalities help perpetuate the current agricultural system.98 Under the current system, agribusinesses may pollute the environment, deplete clean water and soil, and promote social inequity without having to account for these harms when calculating profits. These external costs are significant; contaminated industrial farm runoff alone causes an estimated $9 billion of damage annually to U.S. surface waters.99 Further, the externalization of these costs discourages agribusinesses from conserving water, fertile land, and other natural resources. 2. Environmental Sustainability and Urban Development Trends Current urban development trends impact the environment in several significant ways. The most direct impacts are land consumption and the destruction of natural habitats.100 While interior urban areas are deteriorating and being abandoned at an increasing rate, the constant consumption of land to support new urban development is destroying greenfields, forests, and species.101 These new communities require land not only for building homes and businesses, but also for housing public services, such as schools and hospitals, and for creating an expanded transportation infrastructure.102 Increased commuting associated with urban sprawl and flight from blighted areas relies on oil, a finite resource with decreasing availability, and significantly contributes to greenhouse gas emissions,103 which pollute the air and contribute to climate change.104 Urban sprawl further contributes to the degradation of the environment by polluting water sources with runoff from newly constructed impervious surfaces such as homes and transportation infrastructures.105 During the construction phase, stormwater flows over construction sites, “pick[ing] up debris, chemicals, and sediment that flow into water bodies.”106 Water pollution continues to degrade the environment post-construction as stormwater runoff from paved surfaces, including new roads and highways, is also contaminated.107 3. Environmental Sustainability and Urban Agriculture Transitioning from an industrial agricultural system to a sustainable urban agricultural system would minimize the impacts of food production on the planet. Urban agriculture reduces the consumption of undeveloped land for farming. Food would be produced in areas that are already developed and populated, thereby conserving open space for natural habitat. Due to the proximity of urban gardens to dwellings and other buildings, urban agriculture must be performed without the use of large machinery and without the use of chemical pesticides and fertilizers.108 While lack of such inputs could be perceived as a challenge, urban gardening methods may result in increased crop yields on smaller plots of land than conventional farming practices achieve.109 Rather than maximizing crop yields through extensive use of chemicals, sustainable agriculture relies on crop rotation, composting, biofertilizers, and other organic farming techniques to improve soil fertility.110 Organic farming methods also protect water resources because organic farms do not use chemical inputs so there is no contamination of groundwater and streams.111 Furthermore, organic fertilizers reduce the amount of waste deposited in landfills because they are made from composted and recycled food waste, leaves, and lawn clippings.112 Urban gardening reduces the effects of climate change by decreasing greenhouse gas emissions. Unlike industrial farms, urban gardens are cultivated and harvested with minimal mechanization and do not use oil-based fertilizers.113 Moreover, food that is grown and sold locally eliminates the need for wasteful plastic packaging and fossil-fueled transport to market.114 Additionally, having fresh food available in every neighborhood would reduce carbon-emitting automobile trips to the grocery store.115 Urban agriculture presents an opportunity to reverse the decline of urban areas. A significant benefit of urban gardens is the beautification of urban neighborhoods and strengthening of community spirit.116 Urban gardens also can prompt the cleanup of contaminated vacant lots.117 Furthermore, increasing the amount of vegetation in urban areas would reduce surface temperatures during hot months and improve urban air quality.118 B. Economic Sustainability Sustainability requires that economic growth and development must be integrated with environmental protection and sustainable utilization of resources.119 Economic growth and development must also promote both intergenerational and intragenerational equity.120 While a steadily expanding economy is considered prosperity, a growing world population coupled with increasing overall consumption threatens to strain our planet beyond its carrying capacity.121 When economic stability is equated with increased consumption, we push the limits of the planet’s carrying capacity. Simply put, we are depleting the Earth’s resources at a rate that threatens the Earth’s future ability to support our species. The economic aspect of sustainability also addresses the fact that many of the planet’s resources are treated as externalities in the marketplace.122 For example, the costs of depleting natural resources and polluting the air, water, and ground are not reflected in the price of goods. Through regulations, mandates, and incentives, the U.S. government addresses some of these environmental costs,123 but more must be done to implement policies that will incorporate external costs into pricing structures. 1. Economic Sustainability and Industrial Agriculture Industrial agriculture is not economically sustainable. Industrial agriculture seeks to maximize profits without regard for environmental degradation or the long-term effects of heavy reliance on chemical pesticides and fertilizers. Rather than balancing economic growth with environmental protection and equity, industrial agriculture concentrates on maximizing profits at the expense of the environment and society, both in the present and the future. The United States currently has no regulations or policies in place that would impose costs upon agribusinesses for externalities;124 rather, current policies promote harmful industrial agricultural methods.125 A food production system that allows businesses to maximize profits without concern for its impact on society and the environment is not sustainable.

#### Cuban agriculture sustainability is failing—foreign investment is key

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Cuba needed an alternative agricultural model when foreign oil imports were cut off significantly at the end of the 1980s, and the partial opening of the Cuban economy, focused on creating more autonomous agricultural cooperatives, in the 1990s helped diversity food crops and set Cuba along a path of increased food security. The Cuban model was initiated out of necessity, not because of any sort of Cuban environmental consciousness, yet better environmental conditions went hand in hand with the new development strategy. Cuba learned the limits of their agricultural model under their socialist economic system and it is in need of further transformation in both the agriculture and energy sectors. A further opening of the economy to joint ventures could help with updating the power grid and providing more sources of renewable energy – potentially expanding Cuba’s potential for a more sustainable means of energy security. Further, Cuba needs foreign investment to update agriculture facilities and take maximum advantage of cogeneration and biofuel potential with sugarcane waste. The strong state control of farming practices, used to successfully jumpstart the alternative model, has hit its limit. The Cuban government must begin loosening its grips on the domestic economy to allow for more competition in the farming sector. Despite the potential to become more sustainable with a purposive and focused opening of the economy, the recent surge in joint venture investment on expanding domestic oil extraction, petrochemical facilities, and oil refinery infrastructure reveals a trend toward decreasing environmental sustainability. Once heralded as the world’s most sustainable country by coupling environmental performance indicators with their human development scores, Cuba is slipping further away from this goal. Perhaps the most distressing part of this current trend is that it took Cuba decades to create a national identity that embraced sustainable environmental practices in both the energy and agricultural sector, and it seemingly took only a couple of years to derail these efforts. Undoubtedly, conservation efforts and sustainable education programs can only satiate citizen’s energy desires to a certain point. In order to further the quality of life in the country, electric production must increase to rural areas with little energy infrastructure and to Havana in order to spur foreign investment and domestic small business growth. Cuba’s trade agreement with Venezuela is bringing in much-needed petroleum for electricity production, but their dependence on a relatively unstable country for crude is trapping them into the same relationship that crippled their economy in 1990 – impairing their original goal of self-sufficiency. Cuba is at a turning point in their path toward environmental sustainability, and the current need for immediate foreign capital and increased energy production seem to be trumping its desire to achieve development sustainably. Cuba still has enough centralized control to leap-frog dirty electric production for cleaner renewable forms of energy and the potential to guide development strategies that emphasize investments in and research on renewable energy. It can utilize its expertise on organic farming strategies to increase sugar production in a much more ecologically friendly manner than their monoculture approach in the 1970s and 80s. Decisions made in the next five years will demonstrate whether Cuba embraces their newly created national identity as a society striving for sustainable development or rejects the goal of sustainable development to increase short-term capital and energy needs.

#### The plan provides foreign capital to Cuba and allows its model to be exported globally

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Cuba today is experiencing the most rapid shifts towards privatization and reform since the revolution more than sixty years ago. Though truly open trade with Cuba will remain out of reach until the embargo is relaxed or a new trade agreement is reached, it is worth the time of agricultural and business entities in the United States to consider how they may approach doing business in Cuba. Given the extent of pre-embargo trade between the United States and Cuba it is no stretch to imagine the enormous possibilities once that partnership is reestablished. Though reforms over the past decade have made significant progress towards this end, they only scratch the surface on what Cuba has to offer. The two economic areas where Cuba shows perhaps the most promise and have the greatest potential for international trade and investment are tourism and agriculture. Tourism shows great promise simply for the fact that for more than half a century the country has been entirely cut off from open trade and travel by U.S. citizens, citizens who will likely flock to the country once access is restored. Agriculture in Cuba also presents numerous unique opportunities, and since the collapse of the Soviet Union the country has developed novel agricultural production techniques that could help serve a growing demand for natural, organic foods in the United States. While tourism may increase economic opportunity for existing businesses and industries, Cuba’s agricultural model, on the other hand, presents unique opportunities to both existing and entirely new busi-ness opportunities in the United States. A. Cuba as a Tourist Destination Prior to the embargo, Cuba was a travel destination for as many as 300,000 American tourists per year.91 Tourists from various Soviet Bloc nations never came close to making up this loss in travel, reaching no more than 30,000tourists per year.92 Since the demise of the Soviet Union, however, tourism to the island has continued to increase dramatically. As of July 2012, Cuba is the sec-ond most popular tourist destination in the Caribbean region, trailing only the Dominican Republic.93 Slightly more than two million tourists per year now visit the island as of 2011, representing growth of 7.3% over the last year alone.94 Asof 2005, Cuba’s service sector accounted for 67.8% of the nation’s annual gross domestic product, eclipsing traditional Cuban exports such as nickel and sugar.95Tourist infrastructure in Cuba, however, has strained to accommodate the rapid surge in visitors, with hotels, resorts, restaurants, and other accommodations showing their age after decades of relatively little improvement or investment.96Depending on the precise means through which the travel and economic embargos are lifted, estimates of the number of U.S. visitors expected to visit Cuba within the first year range from six hundred thousand to more than one million, with up to five million visitors per year by the fifth year of open travel.97 There is the potential for modest yet not insignificant job growth in response to new travel opportunities, with potentially over twelve thousand new service sector and trav-el jobs in the United States within five years.98B. Agricultural Trade with Cuba It is the agricultural sector, however, that provides some of the most substantial and intriguing opportunities for both trade with Cuba and the creation of entirely new businesses in the United States. In fact, agricultural products were the very first items traded between the United States and Cuba since the embargo in December of 2001, when two ships loaded with chicken and corn arrived inHavana.99 The potential for the U.S. agricultural sector is abundantly clear when the sheer volume of Cuba’s agricultural imports are taken into account. In 2008,Cuba imported approximately $1.8 billion in agricultural goods.100 Only approximately 40% of imported agricultural goods were from the United States, leaving over $1 billion of trade going to other countries.101Cuba itself is very much in favor of increased agricultural trade with the United States simply for the logistical simplicity and cost-savings it would pro-vide.102 Import costs account for as much as 35% of the goods Cuba currently imports from its trading partners.103 Because Cuba is less than one hundred miles from the coast of the United States, the country is naturally eager to enter into trade relationships that lead to lower transportation costs.104 Cuban officials cite rice as just one example of an agricultural product that they would be inter-ested in obtaining from the United States.106 Rice is a staple food for Cuban citizens, and they enjoy it with almost every meal.107 Presently, the bulk of their rice must be imported from Eastern Asia, meaning a long voyage by sea and the expenses that go along with shipping tons of goods across the Pacific Ocean.108Rice exports alone present an enormous opportunity for U.S. producers. The United States is a major exporter of both processed and unprocessed rice, accounting for 10% of all international trade in rice each year.109 Half of annual U.S. rice sales come from the export market, and the United States is considered a reliable supplier of a quality product on the international market.110 The USDA estimates that if the current restrictions on trade were removed, Cuba could potentially exceed Mexico and Japan as the biggest importer of rice grown in the United States.111 As of September 2005, Cuba estimated that they could purchase more than one million metric tons of rice annually, but restrictions make it unlikely that import from the United States will go much beyond current levels of 712,000 metric tons.112 A key obstacle, according to Cuba, is the requirement that all shipments of agricultural products from the United States be paid for in cash before they leave port.113 This resulted in a reduction in rice ex-ports to Cuba by nearly 50% from 2004 to 2005, according to the USA Rice Fed-eration.114 For the foreseeable future, any effort by agricultural groups in the United States to take advantage of trade opportunities with Cuba will have to operate within the guidelines and policy directives of Cuba as well as the United States. One risk that any organization that wishes to trade with Cuba might encounter is that their proposals and business plans will run into red tape not only through regulations in the United States, but through conflict with the Communist Party of Cuba, which still holds tremendous sway over policy and business decisions on the island. Cuban officials are, of course, aware of the tremendous opportunity that trade with the United States might bring to their country, and for the most part remain eager to pursue closer ties with whom they see as their closest, most natu-ral trading partner.115 Roy Ramón Philippón, a leading official with the Cuban Society of Agrarian Law, indicated that the country recognizes that changes are necessary in order to properly compete with and participate in an open globalmarket.116 Long gone are the days when Cuba could count on highly subsidized exports to the Soviet Bloc as a stable source of income.117 For the first forty years of Cuba’s “socialist experiment” following their revolution, the first priority for the Cuban government was to provide the maximum amount of social services and benefit to the population regardless of the cost; something that they could achieve through trade with the Soviet Bloc prior to its collapse.118The process of reform in Cuba is necessarily dependent upon the approv-al of the national Communist Party. All of the reforms that have been put in place must be considered by and ultimately recommended by the Communist Party operating under their internal guidelines.119 By its nature this is intended to be a slow, deliberative process, the intent of which is to allow all interested gov-ernment officials, business representatives, and interested citizens to voice their opinions and for the Party’s guidelines to take each group’s concerns into ac-count.120Cuba has continued to introduce new programs to assist local producers in becoming more productive while also promoting ecological restoration andpreservation.121 In a shift away from the large state-run farms that characterized Cuban agriculture for much of the twentieth century, Cuba is now focused on diversifying agricultural production through a variety of both privately run and some state-controlled enterprises.122Cuban officials responsible for investigating and recommending addi-tional improvements to the Cuban agricultural system echo this call for reform and increased efficiency and productivity.123 Cuban officials point to the two primary goals that Cuba is pursuing in its efforts to improve its agricultural out-put and modernize their agricultural system; eco-restoration and preservation and urban and suburban agriculture.124 In addition, while the country is desirous of increasing its agricultural exports as a source of income, enough of the goods produced must be funneled into an official state-controlled market that can con-trol prices and ensure that food is affordable even to those with low incomes.125The first priority before any additional exports can be considered is to increase production for local consumption to the point where the country could conceiva-bly become self-sustaining for the majority of its food production needs.126 Once they are producing enough food for local consumption, then priorities may shift towards producing additional crops for export; coffee in particular is one locally produced crop that Cuba is particularly interested in increasing production for both local consumption and export.127Government officials recognize that the Cuban economy is in a relatively underdeveloped state, and future policies will need to be responsive to the state’s economic needs as well as their agricultural ones.128 If, for example, the price of corn were to skyrocket on the world market, Cuban officials indicate that if it made economic sense, they “would cover this island with corn.”129 Similar to the practices of the former Soviet Bloc, the Cuban economy is still very much orga-nized and planned by the state, and the current agricultural plan in Cuba is de-signed to cover the next five years of anticipated growth.130As for direct investment by foreign investors and producers, current poli-cies in Cuba will make that somewhat difficult for the foreseeable future, as all direct business relationships with foreign entities are currently organized and controlled by a number of governmental bodies.131 Cuban officials indicate that future reforms could conceivably open the door to direct investment and transac-tions between Cuban agricultural producers and foreign buyers.132 Understanding this future opportunity first requires a digression into the organizational structure employed in Cuba to manage and direct the agricultural system in Cuba. V. NEW REFORMS The current agricultural system has gone through a period of significant readjustment since the collapse of the Soviet Union. Beginning in 1993, Cuba started to move away from enormous state-run facilities and fully embraced a model of cooperative ownership that it had first introduced in the 1970s with the cooperativa de producción agropecuaria, or CPA.133 The new model, the basic unit of cooperative production, or UBPC, was introduced in September of 1993,and by 1995 there were 2855 UBPCs in operation.134 The UBPC differs from the CPA in that a UBPC operates on land that continues to be owned by the state but is provided to farmers in the form of a usufruct agreement, while a CPA is made up of lands that groups of farmers already had in their possession.135 By the endof 2007, the UBPC had far exceeded the CPA in the amount of land being farmed, with more than 2.8 million hectares of land organized under the UBPC system, compared to just under 700,000 hectares in CPAs.136 The majority of farmland in Cuba remained under state control as of the end of 2007, with more than 6 million hectares of farmland overseen by the state.137Both the UBPCs and the CPAs operate under an arrangement whereby the state provides assistance in the form of access to credit and a market for the goods produced, and in exchange the production cooperatives provide a certain quota of goods for sale and distribution by the state.138 One of the key objectives in the legislation itself is that the farms shall “be owners of the means of produc-tion and of the crop,” while still retaining ownership of the land in state hands.139Goals of this new organization were to improve efficiency and encourage more productive use of land. The goals of the Cuban Revolution continue to be em-bodied in the legislation that created these entities.140In 2008, Cuba passed what is perhaps the most substantial piece of agri-cultural legislation in decades. Named simply “Law 259,” it provides a means for almost any Cuban citizen, existing farm, or authorized agency to acquire un-used state lands and put them to better use as farmland.141 This is a substantial departure from the earlier CPA and UBCP systems that for the most part only transferred existing agricultural land controlled by the state into quasi-privatecooperatives.142 Law 259 continues the usufruct method of land distribution pio-neered by the UBPC system and allows for any interested, qualified party to ap-ply for an initial tract of a maximum of 13.42 hectares (33.16 acres), with their ownership potentially increasing to up to 40.26 hectares (99.48 acres) in the fu-ture.143 Continued operation of farmland granted under this program is contin-gent upon the land being used in a productive, sustainable manner with appropri-ate environmental conservation measures.144Even with the new reforms, the land is still technically tied to the state, and individuals who take possession of land under this program are not permitted to sell or rent the land to others, though the state will compensate landowners for the improvements they have made to the land during their term of tenancy.145The CPA, UBPC, and now Law 259 reforms Cuba put in place, along with reforms the Cuban government is discussing for the future, mean that opportunities for further U.S. involvement in Cuban agriculture are numerous. Presently, foreign companies that wish to enter into business relation-ships with Cuban counterparts must do so almost entirely via official government channels.146 Government agencies such as the Ministry of Sugar or the Ministry of Agriculture are responsible for managing trade for their respective indus-tries.147 All imports of food and other agricultural products must first enter the country via Alimport, a state-run agency that handles the entire sales process from securing contracts and arranging for payment to managing the distributionprocess.148 For the time being, the sole agency that U.S. companies wishing to engage in agricultural trade in Cuba can work with is Alimport.149 Rarely will there be any contact directly between U.S. companies and end-users in Cuba.150The process in the United States can be similarly convoluted. The U.S. Department of Commerce’s Bureau of Industry and Security oversees all busi-ness negotiations with Cuban companies, and notifications of sales must be sub-mitted through them before a license will be granted.151 Since U.S. policy still prohibits the extension of credit to any Cuban banks, all payments either have tobe paid for in cash prior to shipment or a confirmed letter-of-credit can be com-pleted with a bank located in a third country.152 In an unusual and unfortunate overlap in U.S. policy directives, goods that are paid for in cash prior to shipment are legally Cuban property though still in the United States, and potentially sub-ject to seizure on behalf of Cuban exiles within the United States who have out-standing legal and monetary claims against the Cuban government.153 Ships with goods meant for Cuba, however, may leave port as soon as payment is either received in cash or confirmed deposited in a foreign bank, a clarification made by the Department of Treasury Office of Foreign Asset Control in July 2005 in an attempt to reduce anxiety over this possibility.154José Garea Alonso, an official with the Cuban Ministry of Agriculture, indicated that recent legislation such as Law 259 is the start of what may eventu-ally lead to more direct commercial ties between Cuban organizations and foreign buyers or investors.155 At the moment, Cuba’s agricultural cooperatives are relatively small and continue to rely on the state for the bulk of their marketingopportunities.156 In the future, these cooperatives may be allowed to join together to form larger groups of linked agricultural cooperatives working together to manage their own affairs, and may include the ability to directly negotiate with foreign buyers rather than requiring an intervening hand from Alimport or anoth-er appropriate ministry.157Foreign investment in Cuban businesses has only been possible in a lim-ited form since the early 1980s, when the Cuban government introduced legisla-tion allowing for foreign entities to create a joint venture with the Cuban gov-ernment for investment purposes.158 Ultimately, the goal of this legislation was to provide an easier means for Cuba to acquire additional foreign currency to inject into its economy.159 Even with the new law, regulations prohibited any foreign participant in a joint enterprise from controlling more than 49%, though such a restriction was not in place for a partnership.160VI. NEW OPPORTUNITIES While investment in Cuban businesses and sales or purchases of Cuban products must still move through official channels under the joint venture law or other Cuban programs, the time is ripe for organizations in the United States to begin laying groundwork for closer ties with Cuban agricultural entities. Recent regulatory changes implemented by the U.S. government provide a means for individuals and businesses to begin forming the relationships with their Cuban counterparts that will lead to future trade opportunities.161As previously mentioned, recent changes in U.S. policy now allow for any individual in the United States, not simply relatives, to donate money to Cu-ban citizens, though not to exceed $500 for any three month consecutive period, with the only restriction being that the recipient is not an official in the Cuban government or the Communist Party.162 Specifically written into these new regu-lations is the idea that these remittances may be spent “to support the develop-ment of private businesses.”163 A five hundred dollar infusion of capital to sup-port a fledging business or farm can be enormously beneficial when the average monthly salary is only 448 pesos, or approximately twenty dollars.164Additional capital will enable small Cuban farms to expand operations by hiring additional help or perhaps purchasing additional farm animals. While purchasing a tractor may seem like an obvious choice for a growing farm, Medardo Naranjo Valdes of the Organoponico Vivero Alamar, a UBPC just out-side of Havana, indicated that farm animals such as oxen would remain the pre-ferred choice for the foreseeable future on the small and midsized farms that make up the majority of the newer agricultural cooperatives.165 Not only do farm animals not require gasoline or incur maintenance costs beyond perhaps an occa-sional veterinarian charge, their waste can be used as fertilizer. Apart from additional labor, funds provided to agricultural cooperatives could be put to use in developing innovative pest control techniques that do not require the use of expensive pesticides or other chemicals. The Vivero Alamar is currently experimenting with a variety of natural pest control techniques such as introducing plants that serve as natural repellents to insects and the introduction of other insects that feed on harmful pests without harming the crops.166Investment in agricultural cooperatives done in this manner will likely fail to see much return on the investment for their foreseeable future, until poli-cies in both the United States and Cuba are changed.167 For a relatively small sum, American investors will get not only the benefit of a close relationship with a Cuban farm that will become a new source of both import and export business in the future, but potentially gain access to innovative agricultural techniques that could be used in the United States immediately.168 Because the logistical structure needed to transport goods from large ru-ral farms into city markets remains underdeveloped, urban and suburban agricul-ture makes up a growing portion of the food produced and consumed in Cuba.169 As in other countries, the population trends in Cuba have continued to shift away from rural areas to more concentrated urban and suburban areas, with about three-fourths of Cubans living in cities.170 With this shift in population has also come a shift in the country’s agricultural system. As of 2007, about 15% of all agriculture in Cuba could be classified as urban agriculture.171 Not only have agricultural practices changed, but eating habits have as well. Without the Soviet Union to provide a ready source of income and the machinery needed to engage in large-scale livestock production, vegetable consumption has increased dramat-ically.172 Nearly every urban area has direct access to a wide variety of locally grown, organic produce.173 Many of the urban farms in Cuba, including the Vivero Alamar, make use of organoponics, a system where crops are produced in raised beds of soil on land that would otherwise be incapable of supporting intensive agricultural pro-duction.174 Many of these raised beds can be constructed in a concentrated area to support a wide variety of produce, with the typical organoponic garden covering anywhere from one half to several hectares in size.175 The rise of the organoponic production method was a shift away from the earlier centralized production mod-el employed by the state. It has been supported through intensive research and development by a variety of state agencies, such as the National Institute of Agri-cultural Science, and continued development has been guided through intensive training and educational programs.176 The organoponic system is not limited in its application to Cuban urban farms, but maintains potential to be applied worldwide, including in the United States. Urban agriculture in Cuba revitalized and put to use previously aban-doned and unused land. A similar approach could be applied to the United States as a means to restore blighted areas.177 Applying Cuban-derived organoponics in U.S. cities could potentially open up an enormous amount of land that was previ-ously unusable. From a business perspective, investing in an organoponic agri-cultural program in the United States is also a sound decision since the demand for local produce reached $4.8 billion in 2008 and is only expected to grow fur-ther, potentially reaching $7 billion in 2012. In an American city beset with high unemployment such as Detroit, Michigan, for example, investing in urban agriculture could potentially generate as many as five thousand new jobs.179 By utilizing Cuba’s system of organopon-ics, the need to use expensive and complex farm machinery could be significantly reduced. Already companies in the United States, such as Farmscape Gardens in southern California, recognize what Cuba’s organoponic system could achieve and have integrated it into their business practices.180 Rachel Bailin, a partner in the company, indicated that it was Cuba’s organic farming practices that helped inspire them to start a company devoted to urban agriculture.181 They have al-ready used Cuba’s organoponic farming methods to produce more than 50,000 pounds of produce since the spring of 2009.182 The potential for future growth in this industry is huge, as Farmscape Gardens’ current levels of production make it the largest urban agriculture company in the state of California.183Cuba not only offers attractive prospects for trading in the future, but methods of agriculture pioneered out of necessity have broad prospects if applied to agriculture in the United States. As the demand for locally grown produce continues to increase, a cost-effective and proven agricultural model like Cuba’s organoponic system may be just what is needed to allow for urban agriculture to flourish. VII. CONCLUSIONS The United States and Cuba have a long, complicated history that years of animosity and finger pointing have certainly done little to improve. For more than fifty years now, the United States has shunned one of its closest neighbors, but recent actions by the Obama administration indicate change is certainly a possibility. In conclusion, the future of trade relations with Cuba can be summed up as follows: First, truly open trade with Cuba is not likely to occur for many years. The political and foreign policy practices that have supported the embargo will not disappear overnight. What is more likely, though, is a continued and gradual relaxation of certain trade policies that will ultimately benefit a number of U.S. industries, agriculture included. While trade in agricultural products is currently possible on a limited scale, agricultural entities in the United States interested in trading with Cuba on a larger scale should begin their preparations now by forg-ing relationships with their Cuban counterparts. Opening the door to further trade will not happen without a concentrated and prolonged push by various in-terest groups in the United States. Second, certain companies that wish to do business in Cuba today are able to do so and should begin familiarizing themselves with the Cuban govern-mental entities such as Alimport. Barring a complete reorganization of the Cu-ban government, agencies such as Alimport will likely continue to oversee for-eign trade for the foreseeable future. Forming business relationships with Cuban companies in the short-term under existing regulations will help support broader trade opportunities in the future. Finally, what Cuba has accomplished in the field of cooperative and ur-ban agricultural products is remarkable, and should serve as an inspiration to farmers and businesses in the United States as well. The Cuban organoponic system of production has great potential for a variety of urban and suburban farming activities in the United States, particularly as demand for local and or-ganic produce continues to rise. As relations between Cuba and the United States continue to thaw in the coming years, organizations that began their preparations today will be best equipped to meet the challenges and opportunities posed by this new and grow-ing market. Political animosities will eventually crumble in the face of the eco-nomic opportunities that closer trade relations could bring to both nations. One of the United States’ closest neighbors has been its enemy for far too long. Cuba presents a unique opportunity American business and agricultural enterprises cannot afford to overlook.

#### Continued reliance on industrial mechanized ag results in catastrophic warming and biodiversity loss

Cummins 10 – Ronnie is the International Director of the Organic Consumers Association. (“Industrial Agriculture and Human Survival: The Road Beyond 10/10/10”, Organic Consumer’s Association, October 7, 2010, <http://www.organicconsumers.org/articles/article_21747.cfm>)

Although transportation, industry, and energy producers are obviously major fossil fuel users and greenhouse gas polluters, not enough people understand that the worst U.S. and global greenhouse gas emitter is "Food Incorporated," transnational industrial food and farming, of which Monsanto and GMOs constitute a major part. Industrial farming, including 173 million acres of GE soybeans, corn, cotton, canola, and sugar beets, accounts for at least 35% of U.S. greenhouse gas emissions (EPA's ridiculously low estimates range from 7% to 12%, while some climate scientists feel the figure could be as high as 50% or more). Industrial agriculture, biofuels, and non-sustainable cattle grazing - including cutting down the last remaining tropical rainforests in Latin America and Asia for GMO and chemical-intensive animal feed and biofuels - are also the main driving forces in global deforestation and wetlands destruction, which generate an additional 20% of all climate destabilizing GHGs. In other words the direct (food, fiber, and biofuels production, food processing, food distribution) and indirect damage (deforestation and destruction of wetlands) of industrial agriculture, GMOs, and the food industry are the major cause of global warming. Unless we take down Monsanto and Food Inc. and make the Great Transition to a relocalized system of organic food and farming, we and our children are doomed to reside in Climate Hell. Overall 78% of climate destabilizing greenhouse gases come from CO2, while the remainder come from methane, nitrous oxide, and black carbon or soot. To stabilize the climate we will need to drastically reduce all of these greenhouse gas emissions, not just CO2, and sequester twice as much carbon matter in the soil (through organic farming and ranching, and forest and wetlands restoration) as we are doing presently. Currently GMO and industrial/factory farms (energy and chemical-intensive) farms emit at least 25% of the carbon dioxide (mostly from tractors, trucks, combines, transportation, cooling, freezing, and heating); 40% of the methane (mostly from massive herds of animals belching and farting, and manure ponds); and 96% of nitrous oxide (mostly from synthetic fertilizer manufacture and use, the millions of tons of animal manure from factory-farmed cattle herds, pig and poultry flocks, and millions of tons of sewage sludge spread on farms). Black carbon or soot comes primarily from older diesel engines, slash and burn agriculture, and wood cook stoves. Per ton, methane is 21 times more damaging, and nitrous oxide 310 times more damaging, as a greenhouse gas than carbon dioxide, when measured over a one hundred year period. Damage is even worse if you look at the impact on global warming over the next crucial 20-year period. Many climate scientists admit that they have previously drastically underestimated the dangers of the non-CO2 GHGs, including methane, soot, and nitrous oxide, which are responsible for at least 22% of global warming.

#### A move towards organic ag mitigates future emissions and prevents warming

Scialabba 10 – Nadia is from the Natural Resources Management and Environment Department, Food and Agriculture Organization of the United Nations (FAO). (“Organic agriculture and climate change”, February 2, 2010, Renewable Agriculture and Food Systems 25.2, <http://www.fao.org/docs/eims/upload/275960/al185e.pdf>,)

Organic agricultural systems have an inherent potential to both reduce GHG emissions and to enhance carbon sequestration in the soil (Table 1). An important potential contribution of organically managed systems is the careful management of nutrients, and hence the reduction of N2 O emissions from soils, which are the most relevant single source of direct GHG emissions from agriculture. More research is needed to quantify and improve the effects of organic paddy rice production and to develop strategies to reduce methane emissions from enteric fermentation (e.g., by promoting double-use breeds). Indirect GHG emissions are reduced in organic systems by avoidance of mineral fertilizers. With the current organic consumers’ demand, further emission reductions are expected when organic standards include speciﬁc climate standards that consider, inter alia, reduced energy consumption in the organic food chain (e.g., limitations on greenhouse heating/cooling, processing and packaging, food miles combined with life cycle assessment). The advantage of organic systems is that they are driven by aware consumers and that they already carry a guarantee system of veriﬁcation and labeling which is consonant with climate labeling113 . The highest mitigation potential of organic agriculture lies in carbon sequestration in soils and in reduced clearing of primary ecosystems. The total amount of mitigation is difﬁcult to quantify, because it is highly dependent on local environmental conditions and management practices. Should all agricultural systems be managed organically, the omission of mineral fertilizer production and application is estimated to reduce the agricultural GHG emissions by about 20% — 10% caused by reduced N2 O emissions and about 10% by lower energy demand. These avoided emissions are supplemented by an emission compensation potential through carbon sequestration in croplands and grasslands of about 40–72% of the current annual agricultural GHG emissions76. However, further research is needed to conﬁrm these ﬁgures, as long-term scientiﬁc studies are limited and do not apply to different kinds of soils, climates and practices. To date, most of the research on the mitigation potential of agricultural practices has been carried out in developed countries; dedicated investigations are needed to assess and understand the mitigation potential in tropical and subtropical areas and under the predominant management practices of developing countries. More importantly, the adaptation aspects of organic agricultural practices must be the focus of public policies and research. One of the main effects of climate change is an increase of uncertainties, both for weather events and global food markets. Organic agriculture has a strong potential for building resilience in the face of climate variability (Table 2). The total abstention from synthetic inputs in organic agriculture has been a strong incentive to develop agricultural management practices that optimize the natural production potential of speciﬁc agro-ecosystems, based on traditional knowledge and modern research. These strategies can be used to enhance agricultural communities that have no access to purchased inputs, which is the case of the majority of the rural poor. The main organic strategies are diversiﬁcation and an increase of soil organic matter, which both could enhance resilience against extreme weather events and are recommended by the IPCC. These strategies have, in particular, a high potential to enhance the productivity of degraded soils, especially in marginal areas, while enhancing soil carbon sequestration. The adaptive approach inherent to organic agriculture offers simultaneous climate mitigation beneﬁts. Finally, certiﬁed organic products cater for higher income options for producers and hence a market-based incentive for environmental stewardship. The scaling-up of organic agriculture would promote and support climatefriendly farming practices worldwide. However, investments in research and development of organic agriculture are needed to better unlock its potential and application on a large scale.

#### Warming is real and causes extinction – it is the death of countless unborn generations

**Morgan 09 –** Professor of Current Affairs @ Hankuk University of Foreign Studies, South Korea(Dennis Ray, “World on fire: two scenarios of the destruction of human civilization and possible extinction of the human race”, Futures, Volume 41, Issue 10, December 2009, Pages 683-693, ScienceDirect)

As horrifying as the scenario of human extinction by sudden, fast-burning nuclear fire may seem, the one consolation is that this future can be avoided within a relatively short period of time if responsible world leaders change Cold War thinking to move away from aggressive wars over natural resources and towards the eventual dismantlement of most if not all nuclear weapons. On the other hand, another scenario of human extinction by fire is one that may not so easily be reversed within a short period of time because it is not a fast-burning fire; rather, a slow burning fire is gradually heating up the planet as industrial civilization progresses and develops globally. This gradual process and course is long-lasting; thus it cannot easily be changed, even if responsible world leaders change their thinking about ‘‘progress’’ and industrial development based on the burning of fossil fuels. The way that global warming will impact humanity in the future has often been depicted through the analogy of the proverbial frog in a pot of water who does not realize that the temperature of the water is gradually rising. Instead of trying to escape, the frog tries to adjust to the gradual temperature change; finally, the heat of the water sneaks up on it until it is debilitated. Though it finally realizes its predicament and attempts to escape, it is too late; its feeble attempt is to no avail— **and the frog dies**. Whether this fable can actually be applied to frogs in heated water or not is irrelevant; it still serves as a comparable scenario of how the slow burning fire of global warming may eventually lead to a runaway condition and take humanity by surprise. Unfortunately, by the time the politicians finally all agree with the scientific consensus that global warming is indeed human caused, its development could be too advanced to arrest; the poor frog has become too weak and enfeebled to get himself out of hot water. The Intergovernmental Panel of Climate Change (IPCC) was established in 1988 by the WorldMeteorological Organization (WMO) and the United Nations Environmental Programme to ‘‘assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of humaninduced climate change, its potential impacts and options for adaptation and mitigation.’’[16]. Since then, it has given assessments and reports every six or seven years. Thus far, it has given four assessments.13 With all prior assessments came attacks fromsome parts of the scientific community, especially by industry scientists, to attempt to prove that the theory had no basis in planetary history and present-day reality; nevertheless, as more andmore research continually provided concrete and empirical evidence to confirm the global warming hypothesis, that it is indeed human-caused, mostly due to the burning of fossil fuels, the scientific consensus grew stronger that human induced global warming is verifiable. As a matter of fact, according to Bill McKibben [17], 12 years of ‘‘impressive scientific research’’ strongly confirms the 1995 report ‘‘that humans had grown so large in numbers and especially in appetite for energy that they were now damaging the most basic of the earth’s systems—the balance between incoming and outgoing solar energy’’; ‘‘. . . their findings have essentially been complementary to the 1995 report – a constant strengthening of the simple basic truth that humans were burning too much fossil fuel.’’ [17]. Indeed, 12 years later, the 2007 report not only confirms global warming, with a stronger scientific consensus that the slow burn is ‘‘very likely’’ human caused, but it also finds that the ‘‘amount of carbon in the atmosphere is now increasing at a faster rate even than before’’ and the temperature increases would be ‘‘considerably higher than they have been so far were it not for the blanket of soot and other pollution that is temporarily helping to cool the planet.’’ [17]. Furthermore, almost ‘‘everything frozen on earth is melting. Heavy rainfalls are becoming more common since the air is warmer and therefore holds more water than cold air, and ‘cold days, cold nights and frost have become less frequent, while hot days, hot nights, and heat waves have become more frequent.’’ [17]. Unless drastic action is taken soon, the average global temperature is predicted to rise about 5 degrees this century, but it could rise as much as 8 degrees. As has already been evidenced in recent years, the rise in global temperature is melting the Arctic sheets. This runaway polar melting will inflict great damage upon coastal areas, which could be much greater than what has been previously forecasted. However, what is missing in the IPCC report, as dire as it may seem, is sufficient emphasis on the less likely but still plausible worst case scenarios, which could prove to have the most devastating, catastrophic consequences for the long-term future of human civilization. In other words, the IPCC report places too much emphasis on a linear progression that does not take sufficient account of the dynamics of systems theory, which leads to a fundamentally different premise regarding the relationship between industrial civilization and nature. As a matter of fact, as early as the 1950s, Hannah Arendt [18] observed this radical shift of emphasis in the human-nature relationship, which starkly contrasts with previous times because the very distinction between nature and man as ‘‘Homo faber’’ has become blurred, as man no longer merely takes from nature what is needed for fabrication; instead, he now acts into nature to augment and transform natural processes, which are then directed into the evolution of human civilization itself such that we become a part of the very processes that we make. The more human civilization becomes an integral part of this dynamic system, the more difficult it becomes to extricate ourselves from it. As Arendt pointed out, this dynamism is dangerous because of its unpredictability. Acting into nature to transform natural processes brings about an . . . endless new change of happenings whose eventual outcome the actor is entirely incapable of knowing or controlling beforehand. The moment we started natural processes of our own - and the splitting of the atom is precisely such a man-made natural process -we not only increased our power over nature, or became more aggressive in our dealings with the given forces of the earth, but for the first time have taken nature into the human world as such and obliterated the defensive boundaries between natural elements and the human artifice by which all previous civilizations were hedged in’’ [18]. So, in as much as we act into nature, we carry our own unpredictability into our world; thus, Nature can no longer be thought of as having absolute or iron-clad laws. We no longer know what the laws of nature are because the unpredictability of Nature increases in proportion to the degree by which industrial civilization injects its own processes into it; through selfcreated, dynamic, transformative processes, we carry human unpredictability into the future with a precarious recklessness that may indeed end in human catastrophe or extinction, for elemental forces that we have yet to understand may be unleashed upon us by the very environment that we experiment with. Nature may yet have her revenge and the last word, as the Earth and its delicate ecosystems, environment, and atmosphere reach a tipping point, which could turn out to be a point of no return. This is exactly the conclusion reached by the scientist, inventor, and author, James Lovelock. The creator of the wellknown yet controversial Gaia Theory, Lovelock has recently written that it may be already too late for humanity to change course since climate centers around the world, . . . which are the equivalent of the pathology lab of a hospital, have reported the Earth’s physical condition, and the climate specialists see it as seriously ill, and soon to pass into a morbid fever that may last as long as 100,000 years. I have to tell you, as members of the Earth’s family and an intimate part of it, that you and especially civilisation are in grave danger. It was ill luck that we started polluting at a time when the sun is too hot for comfort. We have given Gaia a fever and soon her condition will worsen to a state like a coma. She has been there before and recovered, but it took more than 100,000 years. We are responsible and will suffer the consequences: as the century progresses, the temperature will rise 8 degrees centigrade in temperate regions and 5 degrees in the tropics. Much of the tropical land mass will become scrub and desert, and will no longer serve for regulation; this adds to the 40 per cent of the Earth’s surface we have depleted to feed ourselves. . . . Curiously, aerosol pollution of the northern hemisphere reduces global warming by reflecting sunlight back to space. This ‘global dimming’ is transient and could disappear in a few days like the smoke that it is, leaving us fully exposed to the heat of the global greenhouse. We are in a fool’s climate, accidentally kept cool by smoke, and before this century is over billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable. [19] Moreover, Lovelock states that the task of trying to correct our course is hopelessly impossible, for we are not in charge. It is foolish and arrogant to think that we can regulate the atmosphere, oceans and land surface in order to maintain the conditions right for life. It is as impossible as trying to regulate your own temperature and the composition of your blood, for those with ‘‘failing kidneys know the never-ending daily difficulty of adjusting water, salt and protein intake. The technological fix of dialysis helps, but is no replacement for living healthy kidneys’’ [19]. Lovelock concludes his analysis on the fate of human civilization and Gaia by saying that we will do ‘‘our best to survive, but sadly I cannot see the United States or the emerging economies of China and India cutting back in time, and they are the main source of emissions. The worst will happen and survivors will have to adapt to a hell of a climate’’ [19]. Lovelock’s forecast for climate change is based on a systems dynamics analysis of the interaction between humancreated processes and natural processes. It is a multidimensional model that appropriately reflects the dynamism of industrial civilization responsible for climate change. For one thing, it takes into account positive feedback loops that lead to ‘‘runaway’’ conditions. This mode of analysis is consistent  with recent research on how ecosystems suddenly disappear. A 2001 article in Nature, based on a scientific study by an international consortium, reported that changes in ecosystems are not just gradual but are often sudden and catastrophic [20]. Thus, a scientific consensus is emerging (after repeated studies of ecological change) that ‘‘stressed ecosystems, given the right nudge, are capable of slipping rapidly from a seemingly steady state to something entirely different,’’ according to Stephen Carpenter, a limnologist at the University of Wisconsin-Madison (who is also a co-author of the report). Carpenter continues, ‘‘We realize that there is a common pattern we’re seeing in ecosystems around the world, . . . Gradual **changes in vulnerability accumulate and** eventually **you get a shock** to the system - a flood or a drought - and, boom, you’re over into another regime. It becomes a self-sustaining collapse.’’ [20]. If ecosystems are in fact mini-models of the system of the Earth, as Lovelock maintains, then we can expect the same kind of behavior. As Jonathon Foley, a UW-Madison climatologist and another co-author of the Nature report, puts it, ‘‘Nature isn’t linear. Sometimes you can push on a system and push on a system and, finally, you have the straw that breaks the camel’s back.’’ Also, once the ‘‘flip’’ occurs, as Foley maintains, then the catastrophic change is ‘‘irreversible.’’ [20]. When we expand this analysis of ecosystems to the Earth itself, it’s frightening. What could be the final push on a stressed system that could ‘‘break the camel’s back?’’ Recently, another factor has been discovered in some areas of the arctic regions, which will surely compound the problem of global ‘‘heating’’ (as Lovelock calls it) in unpredictable and perhaps catastrophic ways. This disturbing development, also reported in Nature, concerns the permafrost that has locked up who knows how many tons of the greenhouse gasses, methane and carbon dioxide. Scientists are particularly worried about permafrost because, as it thaws, it releases these gases into the atmosphere, thus, contributing and accelerating global heating. It is a vicious positive feedback loop that compounds the prognosis of global warming in ways that could very well prove to be the tipping point of no return. Seth Borenstein of the Associated Press describes this disturbing positive feedback loop of permafrost greenhouse gasses, as when warming ‘‘. already under way thaws permafrost, soil that has been continuously frozen for thousands of years. Thawed permafrost releases methane and carbon dioxide. Those gases reach the atmosphere and help trap heat on Earth in the greenhouse effect. The trapped heat thaws more permafrost and so on.’’ [21]. The significance and severity of this problem cannot be understated since scientists have discovered that ‘‘the amount of carbon trapped in this type of permafrost called ‘‘yedoma’’ is much more prevalent than originally thought and may be 100 times [my emphasis] the amount of carbon released into the air each year by the burning of fossil fuels’’ [21]. Of course, it won’t come out all at once, at least by time as we commonly reckon it, but in terms of geological time, the ‘‘several decades’’ that scientists say it will probably take to come out can just as well be considered ‘‘all at once.’’ Surely, within the next 100 years, much of the world we live in will be quite hot and may be unlivable, as Lovelock has predicted. Professor Ted Schuur, a professor of ecosystem ecology at the University of Florida and co-author of the study that appeared in Science, describes it as a ‘‘slow motion time bomb.’’ [21]. Permafrost under lakes will be released as methane while that which is under dry ground will be released as carbon dioxide. Scientists aren’t sure which is worse. Whereas methane is a much more powerful agent to trap heat, it only lasts for about 10 years before it dissipates into carbon dioxide or other chemicals. The less powerful heat-trapping agent, carbon dioxide, lasts for 100 years [21]. Both of the greenhouse gasses present in permafrost represent a global dilemma and challenge that compounds the effects of global warming and runaway climate change. The scary thing about it, as one researcher put it, is that there are ‘‘lots of mechanisms that tend to be self-perpetuating and relatively few that tend to shut it off’’ [21].14 In an accompanying AP article, Katey Walters of the University of Alaska at Fairbanks describes the effects as ‘‘huge’’ and, unless we have a ‘‘major cooling,’’ - unstoppable [22]. Also, there’s so much more that has not even been discovered yet, she writes: ‘‘It’s coming out a lot and there’s a lot more to come out.’’ [22]. 4. Is it the end of human civilization and possible extinction of humankind? What Jonathon Schell wrote concerning death by the fire of nuclear holocaust also applies to the slow burning death of global warming: Once we learn that a holocaust might lead to extinction**,** we have no right to gamble, because if we lose, the game will be over, and neither we nor anyone else will ever get another chance. Therefore, although, scientifically speaking, there is all the difference in the world between the mere possibility that a holocaust will bring about extinction and the certainty of it, morally they are the same, and we have no choice but to address the issue of nuclear weapons as though we knew for a certainty that their use would put an end to our species [23].15 When we consider that beyond the horror of nuclear war, another horror is set into motion to interact with the subsequent nuclear winter to produce a poisonous and super heated planet, the chances of human survival seem even smaller. Who knows, even if some small remnant does manage to survive, what the poisonous environmental conditions would have on human evolution in the future. A remnant of mutated, sub-human creatures might survive such harsh conditions, but for all purposes, human civilization has been destroyed, and the question concerning human extinction becomes moot. Thus, **we have** no other choice but **to consider the finality of it all**, as Schell does: ‘‘Death lies at the core of each person’s private existence, but part of death’s meaning is to be found in the fact that it occurs in a biological and social world that survives.’’ [23].16 But what if the world itself were to perish, Schell asks. Would not it bring about a sort of ‘‘second death’’ – the death of the species – a possibility that the vast majority of the human race is in denial about? Talbot writes in the review of Schell’s book that it is not only the ‘‘death of the species, not just of the earth’s population on doomsday, but of countless unborn generations. They would be spared literal death but would nonetheless be victims . . .’’ [23]. That is the ‘‘second death’’ of humanity – the horrifying, unthinkable prospect that there are no prospects – that there will be no future. In the second chapter of Schell’s book, he writes that since we have not made a positive decision to exterminate ourselves but instead have ‘‘chosen to live on the edge of extinction, periodically lunging toward the abyss only to draw back at the last second, our situation is one of uncertainty and nervous insecurity rather than of absolute hopelessness.’’ [23].17 In other words, the fate of the Earth and its inhabitants has not yet been determined. Yet time is not on our side. Will we relinquish the fire and our use of it to dominate the Earth and each other, or will we continue to gamble with our future at this game of Russian roulette while **time** increasingly **stacks the cards against** our chances of **survival**?

### 1AC Plan Text

#### The United States federal government should normalize its trade relations with the Republic of Cuba.

### 1AC Framing

**Advantage 2 is framing**

#### Warming is a form of structural violence – allowing warming to continue perpetuates all inequalities

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Everywhere we turn, the issues and impacts of climate change confront us. One of the most serious environmental threats facing the world today, climate change has moved from the minds of scientists and offices of environmentalists to the mainstream. Though the media is dominated by images of polar bears, melting glaciers, flooded lands, and arid desserts, there is a human face to this story as well. Climate change is not only an issue of the environment; it is also an issue of justice and human rights, one that dangerously intersects race and class. All over the world people of color, Indigenous Peoples and low-income communities bear disproportionate burdens from climate change itself, from ill-designed policies to prevent it, and from side effects of the energy systems that cause it. A Climate of Change explores the impacts of climate change on African Americans, from health to economics to community, and considers what policies would most harm or benefit African Americans—and the nation as a whole. African Americans are thirteen percent of the U.S. population and on average emit nearly twenty percent less greenhouse gases than non-Hispanic whites per capita. Though far less responsible for climate change, African Americans are significantly more vulnerable to its effects than non- Hispanic whites. Health, housing, economic well-being, culture, and social stability are harmed from such manifestations of climate change as storms, floods, and climate variability. African Americans are also more vulnerable to higher energy bills, unemployment, recessions caused by global energy price shocks, and a greater economic burden from military operations designed to protect the flow of oil to the U.S. Climate Justice: The Time Is Now Ultimately, accomplishing climate justice will require that new alliances are forged and traditional movements are transformed. An effective policy to address the challenges of global warming cannot be crafted until race and equity are part of the discussion from the outset and an integral part of the solution. This report finds that: Global warming amplifies nearly all existing inequalities. Under global warming, injustices that are already unsustainable become catastrophic. Thus it is essential to recognize that all justice is climate justice and that the struggle for racial and economic justice is an unavoidable part of the fight to halt global warming. Sound global warming policy is also economic and racial justice policy. Successfully adopting a sound global warming policy will do as much to strengthen the economies of low-income communities and communities of color as any other currently plausible stride toward economic justice. Climate policies that best serve African Americans also best serve a just and strong United States. This paper shows that policies well-designed to benefit African Americans also provide the most benefit to all people in the U.S. Climate policies that best serve African Americans and other disproportionately affected communities also best serve global economic and environmental justice. Domestic reductions in global warming pollution and support for such reductions in developing nations financed by polluter-pays principles provide the greatest benefit to African Americans, the peoples of Africa, and people across the Global South. A distinctive African American voice is critical for climate justice. Currently, legislation is being drafted, proposed, and considered without any significant input from the communities most affected. Special interests are represented by powerful lobbies, while traditional environmentalists often fail to engage people of color, Indigenous Peoples, and low-income communities until after the political playing field has been defined and limited to conventional environmental goals. A strong focus on equity is essential to the success of the environmental cause, but equity issues cannot be adequately addressed by isolating the voices of communities that are disproportionately impacted. Engagement in climate change policy must be moved from the White House and the halls of Congress to social circles, classrooms, kitchens, and congregations. The time is now for those disproportionately affected to assume leadership in the climate change debate, to speak truth to power, and to assert rights to social, environmental and economic justice. Taken together, these actions affirm a vital truth that will bring communities together: Climate Justice is Common Justice. African Americans and Vulnerability In this report, it is shown that African Americans are disproportionately affected by climate change. African Americans Are at Greater Risk from Climate Change and Global Warming Co-Pollutants ¶ • The six states with the highest African American population are all in the Atlantic hurricane zone, and are expected to experience more intense storms resembling Katrina and Rita in the future. ¶ • Global warming is expected to increase the frequency and intensity of heat waves or extreme heat events. African Americans suffer heat death at one hundred fifty to two hundred percent of the rate for non-Hispanic whites. ¶ • Seventy-one percent of African Americans live in counties in violation of federal air pollution standards, as compared to fifty-eight percent of the white population. Seventy-eight percent of African Americans live within thirty miles of a coal-fired power plant, as compared to fifty-six percent of non-Hispanic whites. ¶ • Asthma has strong associations with air pollution, and African Americans have a thirty-six percent higher rate of incidents of asthma than whites. Asthma is three times as likely to lead to emergency room visits or deaths for African Americans. ¶ • This study finds that a twenty-five percent reduction in greenhouse gases—similar to what passed in California and is proposed in major federal legislation—would reduce infant mortality by at least two percent, asthma by at least sixteen percent, and mortality from particulates by at least 6,000 to 12,000 deaths per year. Other estimates have run as high as 33,000 fewer deaths per year. A disproportionate number of the lives saved by these proposed reductions would be African American. African Americans Are Economically More Vulnerable to Disasters and Illnesses ¶ • In 2006, twenty percent of African Americans had no health insurance, including fourteen percent of African American children—nearly twice the rate of non-Hispanic whites. ¶ • In the absence of insurance, disasters and illness (which will increase with global warming) could be cushioned by income and accumulated wealth. However, the average income of African American households is fifty-seven percent that of non-Hispanic whites, and median wealth is only one-tenth that of non-Hispanic whites. ¶ • Racist stereotypes have been shown to reduce aid donations and impede service delivery to African Americans in the wake of hurricanes, floods, fires and other climate-related disasters as compared to non-Hispanic whites in similar circumstances. African Americans Are at Greater Risk from Energy Price Shocks ¶ • African Americans spend thirty percent more of their income on energy than non-Hispanic whites. • Energy price increases have contributed to seventy to eighty percent of recent recessions. The increase in unemployment of African Americans during energy caused recessions is twice that of non-Hispanic whites, costing the community an average of one percent of income every year. • Reducing economic dependence on energy will alleviate the frequency and severity of recessions and the economic disparities they generate. African Americans Pay a Heavy Price and a Disproportionate Share of the Cost of Wars for Oil • Oil company profits in excess of the normal rate of profit for U.S. industries cost the average household $611 in 2006 alone and are still rising. • The total cost of the war in Iraq borne by African Americans will be $29,000 per household if the resulting deficit is financed by tax increases, and $32,000 if the debt is repaid by spending cuts. This is more than three times the median assets of African American households. A Clean Energy Future Creates Far More Jobs for African Americans • Fossil fuel extraction industries employ a far lower proportion of African Americans on average compared to other industries. Conversely, renewable electricity generation employs three to five times as many people as comparable electricity generation from fossil fuels, a higher proportion of whom are African American. ¶ • Switching just one percent of total electricity generating capacity per year from conventional to renewable sources would result in an additional 61,000 to 84,000 jobs for African Americans by 2030. ¶ • A well-designed comprehensive climate plan achieving emission reductions comparable to the Kyoto Protocol would create over 430,000 jobs for African Americans by 2030, reducing the African American unemployment rate by 1.8 percentage points and raising the average African American income by 3 to 4 percent.

#### Climate change is coming now and bears a hugely disproportionate impact on those already at the greatest socioeconomic disadvantage, causing widespread physical displacement and death

Byravan and Rajan 10 Sujatha Byravan and Sudhir Chella Rajan, “The Ethical Implications of Sea-Level Rise Due to Climate Change,” Ethics & International Affairs 24, No. 3, 9/20/2010)

As scientific evidence for the adverse effects of human-induced climate change grows stronger, it is becoming increasingly clear that these questions are of urgent practical interest and require concerted international political action. In the course of this century and the next, the earth’s climate will almost surely get warmer as a direct result of the emissions accumulated in the atmosphere from the burning of fossil fuels since the Industrial Revolution. This warming will very likely result in heat waves, heavy precipitation in some areas, extreme droughts in others, increased hurricane intensity, and sea-level rise of about one meter—although recent findings suggest this rise could quite plausibly be greater than that by century’s end.1 Forecasts of how many people will be displaced by 2050 by climate change vary widely, from about 25 million to 1 billion. The difficulty in accurate forecasting lies not only in the uncertainty regarding future climate change impacts and adaptation measures but also in estimating the outcome of the several complex factors driving migration.2 No other form of environmentally induced human migration will likely be as permanent as that caused by climate-induced SLR; and there are special reasons why its victims deserve unique moral consideration. SLR will affect coastal populations in a variety of ways, including inundation, flood and storm damage, erosion, saltwater intrusion, and wetland loss. Together, these will greatly reduce available land for cultivation, water resources, and fodder, causing severe hardship in terms of livelihood and habitat loss. Worst of all, SLR and the associated changes in the coastal zone will add burdens to many who are already poor and vulnerable. The physical changes associated with SLR may themselves take place in abrupt, nonlinear ways as thresholds are crossed. In turn, the least resilient communities— that is, those dependent on subsistence fishing—will be the first to experience ‘‘tipping points’’ in their life systems, so that the only option available to them would be to abandon their homes and search for better prospects elsewhere. As the average sea level continues to rise, coastal inundation, saltwater intrusion, and storm surges will become more intense and people will find it increasingly difficult to stay in their homes and will look for ways to migrate inland. As ever larger numbers pass thresholds in their ability to cope, more societal tipping points will be crossed, resulting in the sudden mass movements of entire villages, towns, and cities in coastal regions.3 On small islands and in countries with heavily populated delta regions, the very existence of the nation-state may become jeopardized, so that the extremely vulnerable will no longer have state protection they can rely on. The extent of vulnerability to sea-level rise in any given country will depend on more than just its terrain and climatic conditions: the fraction of the population living in low-lying regions, the area and proportion of the country inundated, its wealth and economic conditions, and its prevailing political institutions and infrastructure will all be of relevance. Thus, in a large country, such as the United States or China, coastal communities would be able to move inland, given adequate preparation and government response. In the case of small islands in the South Pacific, however, such an option does not exist, since it is expected that most or even the entire land area will sink or become uninhabitable. In such cases as Bangladesh, Egypt, Guyana, and Vietnam, where nearly half or more of the populations live in low-lying deltaic regions that support a major fraction of their economies, SLR will threaten the very functioning of the state. Moreover, it is increasingly clear that for tens to hundreds of millions of people living in low-lying areas and on small islands, no physical defense is realistically possible or can be fully protective. A recent report by the Dutch Delta Committee proposes annual investments of about 1.5 billion Euros for the rest of the century just to protect the Netherlands’ 200-mile coastline, and indicates that 20–50 percent of coastal land worldwide cannot be protected, especially under conditions where SLR takes place rapidly—as a result, say, of a collapse of major ice sheets in Greenland or Antarctica.4 Even if greenhouse gases are removed from the atmosphere through some future technology, we are already committed to a certain degree of warming and sea-level rise because of the thermal inertia of the oceans. In addition, most residents of small island nations and other low-lying coastal regions around the world will not be able to avail themselves of the sorts of conventional adaptation remedies that are conceivable for the victims of drought, reduced crop yields, desertification, and so on. Apart from exceptional cases where adequate engineering solutions can be developed to prevent inundation, coastal erosion, saltwater intrusion, and other challenges associated with rising seas, people living in these vulnerable regions will be forced to flee, generally with no possibility of return to their original homes. Indeed, migration and permanent resettlement will be the only possible ‘‘adaptation’’ strategy available to millions. Existing international law provides no solution for these individuals, for whom, we will argue, the only just remedy is in the form of special rights of free global movement and resettlement in regions and countries on higher ground in advance of disaster. What Needs to Be Done The issue of climate change and migration has received considerable scholarly attention, primarily in terms of its political and legal implications, but there has been little focus on the ethical aspects.5 In an earlier paper we suggested that the responsibility of absorbing ‘‘climate exiles’’ should be shared among host countries in a manner that is proportional to a host’s cumulative emissions of greenhouse gases.6 Here, we try to develop the ethical basis for the international community, first, to recognize that displaced persons, and in particular those whose nation states will have become physically nonexistent or will face an unendurable burden, should have a special right to free movement to other countries; and, second, to formulate institutional means for providing them political, social, and economic rights. We define the victims’ unbearable burden in the following terms: they will face a breakdown or total forfeiture of prevailing physical, economic, and social support systems; and they will have no effective state to endow them with rights and alleviate their pain. It is not our intention to provide a particular formula for how individual countries should be made responsible for the victims’ habitation and citizenship, but to suggest instead that once the basic principle of shared responsibility based on each country’s contribution to climate change is accepted, there could be several ways to determine precisely how the costs of policy implementation should be distributed, how rights could be exercised by the climate exiles and migrants, and what other institutional and political mechanisms should be established to avert a massive refugee crisis. The fairest solution, we therefore propose, is for the international community to grant, in the first instance, the individual right to migrate to safe countries for those who will be displaced forcibly by SLR. We then recommend that an international treaty begin to address this issue so that climate migrants and future exiles will be able to find homes well in advance of the actual emergency.7 Indeed, unlike in the case of natural disasters, such as the Asian tsunami of December 2004, the world is already sufficiently forewarned about the need to prepare for the effects of SLR and has ample time and opportunity to make reasoned judgments about how best to respond.8 We contend that the alternative—to ignore potential victims until after they become ‘‘environmental refugees’’—is morally indefensible as well as impractical. For one thing, the victims in the case of SLR cannot even be classified as ‘‘refugees’’ since there are no legal instruments that give them this option. Notably, the Refugee Convention, designed to protect those forced to flee their homes as a result of war or persecution, in force since 1954, recognizes as a refugee someone who is ‘‘unable [or] unwilling to avail himself of the protection’’ of his country of nationality and is outside that country ‘‘owing to well-grounded fear of being persecuted for reasons of race, religion, nationality, membership in a particular social group or political opinion’’—a definition that does not extend to those adversely affected by environmental disasters, including climatic change. In this paper and elsewhere we therefore reserve the terms ‘‘climate migrants’’ and ‘‘climate exiles’’ to refer to the victims of SLR attributed to climate change. The former includes all those who are displaced because of the effects of climate change, while the latter refers to a special category of climate migrants who will have lost their ability to remain well-functioning members of political societies in their countries, often through no fault of their own. Further, while most climate migrants will be internally displaced people, or have the opportunity of returning to their countries or regions of origin if adequate adaptation measures were taken, climate exiles will be forced to become permanently stateless in the absence of other remedies. Duties to Climate Exiles Our fundamental argument is that humanity carries a special obligation to present and future generations of people whose homes, means of livelihood, and membership in states will be lost specifically as a result of sea-level rise caused by climate change. We draw upon the principle of intergenerational equity, wherein each generation is collectively responsible for protecting and using natural resources in a sustainable manner so that future generations are not unduly harmed by their present misuse. The recognition of this duty implies, as Joerg Tremmel suggests, that ‘‘in spite of the difficulties such as opportunity costs, restricted human ability and foresight, modern collective agents (present governments and leading industrial companies) have to take their responsibility for future generations seriously.’’9 This responsibility is carried over to representative agents in the future who share the legacy of causing harm with their forebears but who now have the ability to recognize the suffering that ensues as a result of historical (if not continuing) actions and can therefore make amends to the sufferers who live in their midst. As we discuss later, this is not always equivalent to an argument for making reparations for past injury.

#### The state is inevitable and an indispensable part of the solution to warming

Eckersley 4 Robyn, Reader/Associate Professor in the Department of Political Science at the University of Melbourne, “The Green State: Rethinking Democracy and Sovereignty”, MIT Press, 2004, Google Books, pp. 3-8)

While acknowledging the basis for this antipathy toward the nation- state, and the limitations of state-centric analyses of global ecological degradation, I seek to draw attention to the positive role that states have played, and might increasingly play, in global and domestic politics. Writing more than twenty years ago, Hedley Bull (a proto-constructivist and leading writer in the English school) outlined the state's positive role in world affairs, and his arguments continue to provide a powerful challenge to those who somehow seek to "get beyond the state," as if such a move would provide a more lasting solution to the threat of armed conflict or nuclear war, social and economic injustice, or environmental degradation.10 As Bull argued, given that the state is here to stay whether we like it or not, then the call to get "beyond the state is a counsel of despair, at all events if it means that we have to begin by abolishing or subverting the state, rather than that there is a need to build upon it.""¶ In any event, rejecting the "statist frame" of world politics ought not prohibit an inquiry into the emancipatory potential of the state as a crucial "node" in any future network of global ecological governance. This is especially so, given that one can expect states to persist as major sites of social and political power for at least the foreseeable future and that any green transformations of the present political order will, short of revolution, necessarily be state-dependent. Thus, like it or not, those concerned about ecological destruction must contend with existing institutions and, where possible, seek to "rebuild the ship while still at sea." And if states are so implicated in ecological destruction, then an inquiry into the potential for their transformation even their modest reform into something that is at least more conducive to ecological sustainability would seem to be compelling.¶ Of course, it would be unhelpful to become singularly fixated on the redesign of the state at the expense of other institutions of governance. States are not the only institutions that limit, condition, shape, and direct political power, and it is necessary to keep in view the broader spectrum of formal and informal institutions of governance (e.g., local, national, regional, and international) that are implicated in global environmental change. Nonetheless, while the state constitutes only one modality of political power, it is an especially significant one because of its historical claims to exclusive rule over territory and peoples—as expressed in the principle of state sovereignty. As Gianfranco Poggi explains, the political power concentrated in the state "is a momentous, pervasive, critical phenomenon. Together with other forms of social power, it constitutes an indispensable medium for constructing and shaping larger social realities, for establishing, shaping and maintaining all broader and more durable collectivities."12 States play, in varying degrees, significant roles in structuring life chances, in distributing wealth, privilege, information, and risks, in upholding civil and political rights, and in securing private property rights and providing the legal/regulatory framework for capitalism. Every one of these dimensions of state activity has, for good or ill, a significant bearing on the global environmental crisis. Given that the green political project is one that demands far-reaching changes to both economies and societies, it is difficult to imagine how such changes might occur on the kind of scale that is needed without the active support of states. While it is often observed that states are too big to deal with local ecological problems and too small to deal with global ones, the state nonetheless holds, as Lennart Lundqvist puts it, "a unique position in the constitutive hierarchy from individuals through villages, regions and nations all the way to global organizations. The state is inclusive of lower political and administrative levels, and exclusive in speaking for its whole territory and population in relation to the outside world."13 In short, it seems to me inconceivable to advance ecological emancipation without also engaging with and seeking to transform state power.¶ Of course, not all states are democratic states, and the green movement has long been wary of the coercive powers that all states reputedly enjoy. Coercion (and not democracy) is also central to Max Weber's classic sociological understanding of the state as "a human community that (successfully) claims the monopoly of the legitimate use of physical force within a given territory."14 Weber believed that the state could not be defined sociologically in terms of its ends\* only formally as an organization in terms of the particular means that are peculiar to it.15 Moreover his concept of legitimacy was merely concerned with whether rules were accepted by subjects as valid (for whatever reason); he did not offer a normative theory as to the circumstances when particular rules ought to be accepted or whether beliefs about the validity of rules were justified. Legitimacy was a contingent fact, and in view of his understanding of politics as a struggle for power in the context of an increasingly disenchanted world, likely to become an increasingly unstable achievement.16¶ In contrast to Weber, my approach to the state is explicitly normative and explicitly concerned with the purpose of states, and the democratic basis of their legitimacy. It focuses on the limitations of liberal normative theories of the state (and associated ideals of a just constitutional arrangement), and it proposes instead an alternative green theory that seeks to redress the deficiencies in liberal theory. Nor is my account as bleak as Weber's. The fact that states possess a monopoly of control over the means of coercion is a most serious matter, but it does not necessarily imply that they must have frequent recourse to that power. In any event, whether the use of the state's coercive powers is to be deplored or welcomed turns on the purposes for which that power is exercised, the manner in which it is exercised, and whether it is managed in public, transparent, and accountable ways—a judgment that must be made against a background of changing problems, practices, and under- standings. The coercive arm of the state can be used to "bust" political demonstrations and invade privacy. It can also be used to prevent human rights abuses, curb the excesses of corporate power, and protect the environment.¶ In short, although the political autonomy of states is widely believed to be in decline, there are still few social institution that can match the same degree of capacity and potential legitimacy that states have to redirect societies and economies along more ecologically sustainable lines to address ecological problems such as global warming and pollution, the buildup of toxic and nuclear wastes and the rapid erosion of the earth's biodiversity. States—particularly when they act collectively—have the capacity to curb the socially and ecologically harmful consequences of capitalism. They are also more amenable to democratization than cor- porations, notwithstanding the ascendancy of the neoliberal state in the increasingly competitive global economy. There are therefore many good reasons why green political theorists need to think not only critically but also constructively about the state and the state system. While the state is certainly not "healthy" at the present historical juncture, in this book I nonetheless join Poggi by offering "a timid two cheers for the old beast," at least as a potentially more significant ally in the green cause.17

#### We came to the understanding that warming was such an important topic of discussion through science – you should prefer science and the discussion of trends data and analysis over assertions and theories – there is a scientific consensus around warming – that science is good

Hutcheon 93— (former prof of sociology of education at U Regina and U British Columbia. Former research advisor to the Health Promotion Branch of the Canadian Department of Health and Welfare and as a director of the Vanier Institute of the Family. Phd in sociology, began at Yale and finished at U Queensland. (Pat, A Critique of "Biology as Ideology: The Doctrine of DNA", <http://www.humanists.net/pdhutcheon/humanist%20articles/lewontn.htm>)

The introductory lecture in this series articulated the increasingly popular "postmodernist" claim that all science is ideology. Lewontin then proceeded to justify this by stating the obvious: that scientists are human like the rest of us and subject to the same biases and socio-cultural imperatives. Although he did not actually say it, his comments seemed to imply that the enterprise of scientific research and knowledge building could therefore be no different and no more reliable as a guide to action than any other set of opinions. The trouble is that, in order to reach such an conclusion, one would have to ignore all those aspects of the scientific endeavor that do in fact distinguish it from other types and sources of belief formation.¶ Indeed, if the integrity of the scientific endeavor depended only on the wisdom and objectivity of the individuals engaged in it we would be in trouble. North American agriculture would today be in the state of that in Russia today. In fact it would be much worse, for the Soviets threw out Lysenko's ideology-masquerading-as-science decades ago. Precisely because an alternative scientific model was available (thanks to the disparaged Darwinian theory) the former Eastern bloc countries have been partially successful in overcoming the destructive chain of consequences which blind faith in ideology had set in motion. This is what Lewontin's old Russian dissident professor meant when he said that the truth must be spoken, even at great personal cost. How sad that Lewontin has apparently failed to understand the fact that while scientific knowledge -- with the power it gives us -- can and does allow humanity to change the world, ideological beliefs have consequences too. By rendering their proponents politically powerful but rationally and instrumentally impotent, they throw up insurmountable barriers to reasoned and value-guided social change.¶ What are the crucial differences between ideology and science that Lewonton has ignored? Both Karl Popper and Thomas Kuhn have spelled these out with great care -- the former throughout a long lifetime of scholarship devoted to that precise objective. Stephen Jay Gould has also done a sound job in this area. How strange that someone with the status of Lewontin, in a series of lectures supposedly covering the same subject, would not at least have dealt with their arguments!¶ Science has to do with the search for regularities in what humans experience of their physical and social environments, beginning with the most simple units discernible, and gradually moving towards the more complex. It has to do with expressing these regularities in the clearest and most precise language possible, so that cause-and-effect relations among the parts of the system under study can be publicly and rigorously tested. And it has to do with devising explanations of those empirical regularities which have survived all attempts to falsify them. These explanations, once phrased in the form of testable hypotheses, become predictors of future events. In other words, they lead to further conjectures of additional relationships which, in their turn, must survive repeated public attempts to prove them wanting -- if the set of related explanations (or theory) is to continue to operate as a fruitful guide for subsequent research.¶ This means that science, unlike mythology and ideology, has a self-correcting mechanism at its very heart. A conjecture, to be classed as scientific, must be amenable to empirical test. It must, above all, be open to refutation by experience. There is a rigorous set of rules according to which hypotheses are formulated and research findings are arrived at, reported and replicated. It is this process -- not the lack of prejudice of the particular scientist, or his negotiating ability, or even his political power within the relevant university department -- that ensures the reliability of scientific knowledge. The conditions established by the community of science is one of precisely defined and regulated "intersubjectivity". Under these conditions the theory that wins out, and subsequently prevails, does so not because of its agreement with conventional wisdom or because of the political power of its proponents, as is often the case with ideology. The survival of a scientific theory such as Darwin's is due, instead, to its power to explain and predict observable regularities in human experience, while withstanding worldwide attempts to refute it -- and proving itself open to elaboration and expansion in the process. In this sense only is scientific knowledge objective and universal. All this has little relationship to the claim of an absolute universality of objective "truth" apart from human strivings that Lewontin has attributed to scientists.¶ Because ideologies, on the other hand, do claim to represent truth, they are incapable of generating a means by which they can be corrected as circumstances change. Legitimate science makes no such claims. Scientific tests are not tests of verisimilitude. Science does not aim for "true" theories purporting to reflect an accurate picture of the "essence" of reality. It leaves such claims of infallibility to ideology. The tests of science, therefore, are in terms of workability and falsifiability, and its propositions are accordingly tentative in nature. A successful scientific theory is one which, while guiding the research in a particular problem area, is continuously elaborated, revised and refined, until it is eventually superseded by that very hypothesis-making and testing process that it helped to define and sharpen. An ideology, on the other hand, would be considered to have failed under those conditions, for the "truth" must be for all time. More than anything, it is this difference that confuses those ideological thinkers who are compelled to attack Darwin's theory of evolution precisely because of its success as a scientific theory. For them, and the world of desired and imagined certainty in which they live, that very success in contributing to a continuously evolving body of increasingly reliable -- albeit inevitably tentative -- knowledge can only mean failure, in that the theory itself has altered in the process.

#### Simulation and institutional deliberation are valuable and motivate effective responses to climate risks

Marx et al 7 (Sabine M, Center for Research on Environmental Decisions (CRED) @ Columbia University, Elke U. Weber, Graduate School of Business and Department of Psychology @ Columbia University, Benjamin S. Orlovea, Department of Environmental Science and Policy @ University of California Davis, Anthony Leiserowitz, Decision Research, David H. Krantz, Department of Psychology @ Columbia University, Carla Roncolia, South East Climate Consortium (SECC), Department of Biological and Agricultural Engineering @ University of Georgia and Jennifer Phillips, Bard Centre for Environmental Policy @ Bard College, “Communication and mental processes: Experiential and analytic processing of uncertain climate information”, 2007, <http://climate.columbia.edu/sitefiles/file/Marx_GEC_2007.pdf>)

Based on the observation that experiential and analytic processing systems compete and that personal experience and vivid descriptions are often favored over statistical information, we suggest the following research and policy implications.¶ Communications designed to create, recall and highlight relevant personal experience and to elicit affective responses can lead to more public attention to, processing of, and engagement with forecasts of climate variability and climate change. Vicarious experiential information in the form of scenarios, narratives, and analogies can help the public and policy makers imagine the potential consequences of climate variability and change, amplify or attenuate risk perceptions, and influence both individual behavioral intentions and public policy preferences. Likewise, as illustrated by the example of retranslation in the Uganda studies, the translation of statistical information into concrete experience with simulated forecasts, decisionmaking and its outcomes can greatly facilitate an intuitive understanding of both probabilities and the consequences of incremental change and extreme events, and motivate contingency planning.¶ Yet, while the engagement of experience-based, affective decision-making can make risk communications more salient and motivate behavior, experiential processing is also subject to its own biases, limitations and distortions, such as the finite pool of worry and single action bias. Experiential processing works best with easily imaginable, emotionally laden material, yet many aspects of climate variability and change are relatively abstract and require a certain level of analytical understanding (e.g., long-term trends in mean temperatures or precipitation). Ideally, communication of climate forecasts should encourage the interactive engagement of both analytic and experiential processing systems in the course of making concrete decisions about climate, ranging from individual choices about what crops to plant in a particular season to broad social choices about how to mitigate or adapt to global climate change.¶ One way to facilitate this interaction is through group and participatory decision-making. As the Uganda example suggests, group processes allow individuals with a range of knowledge, skills and personal experience to share diverse information and perspectives and work together on a problem. Ideally, groups should include at least one member trained to understand statistical forecast information to ensure that all sources of information—both experiential and analytic—are considered as part of the decision-making process. Communications to groups should also try to translate statistical information into formats readily understood in the language, personal and cultural experience of group members. In a somewhat iterative or cyclical process, the shared concrete information can then be re-abstracted to an analytic level that leads to action.¶ Risk and uncertainty are inherent dimensions of all climate forecasts and related decisions. Analytic products like trend analysis, forecast probabilities, and ranges of uncertainty ought to be valuable contributions to stakeholder decision-making. Yet decision makers also listen to the inner and communal voices of personal and collective experience, affect and emotion, and cultural values. Both systems—analytic and experiential—should be considered in the design of climate forecasts and risk communications. If not, many analytic products will fall on deaf ears as decision makers continue to rely heavily on personal experience and affective cues to make plans for an uncertain future. The challenge is to find innovative and creative ways to engage both systems in the process of individual and group decision-making.

#### Students interrogating environmental issues is critical to developing sustainable solutions – Must also be coupled with policy advocacy in order to succeed

**Cotgrave and Alkhaddar 6** – Alison Cotgrave has a PhD in Sustainability Literacy, she is currently the Deputy Director of the School of the Built Environment and a researcher in construction education, she is also a Fellow of the Higher Education Academy, Rafid Alkhaddar has a PhD in Civil Engineering and currently teaches at the School of the Built Environment John Moores University in Liverpool as a Professor of Water and Environmental Engineering (March 2006, “Greening the Curricula within Construction Programmes,” Journal for Education in the Built Environment, Vol.1, Issue 1, March 2006 pp. 3-29, http://131.251.248.49/jebe/pdf/AlisonCotgrave1(1).pdf)

Environmental education

Many writers have determined that the main aim of environmental education is to change attitudes, that will in turn change behaviour. As long ago as 1976, Ramsey and Rickson identified that it has long been known that the basis for many environmental problems is irresponsible behaviour. Without a doubt, one of the most important influences on behaviour is attitude, that in turn is influenced by education. Campbell Bradley et al. (1999) stress the need for trying to change young people’s environmental attitudes because young people ultimately will be affected by, and will need to provide, solutions to environmental problems arising from present day actions. **As future policymakers**, the youth of today will be responsible for ‘fixing’ the environment and **they will be the ones who must be persuaded to act now** in order to avoid paying a high price to repair damage to the environment in the future, if indeed it is repairable. Therefore it appears that effective environmental education, which changes the attitudes of young people, is crucial. The (then) Department for Education (DFE) report, commonly known as the ‘Toyne Report’ (DFE, 1993), concluded that as education seeks to lead opinion, it will do so more effectively if it keeps in mind the distinctive nature of its mission, which is first and foremost to improve its students’ understanding. Their concern may well be awakened as a result; but it must be a properly informed concern. This does not necessarily mean treating the environment as a purely scientific issue, but does mean that **the respective roles of science and ethics need to be distinguished**, and the complexities of each need to be acknowledged. **Failure to do this may lead all too readily to an ‘environmentalism’ which**, by depicting possibilities as certainties, **can only discredit itself in the long run** and feed the complacency which it seeks to dispel. McKeown-Ice and Dendinger (2000) have identified the fact that scientific knowledge and political intervention will not solve the environmental problem on their own, thus implying that something additional is required to change behaviour. As has already been discussed, behaviour changes can only occur if attitudes change and this can be achieved through education. As Fien (1997) identifies, environmental education can play a key role by creating awareness, and changing people’s values, skills and behaviour. Introducing environmental elements into the curriculum can therefore be seen as a potentially effective way of transferring knowledge. This should in turn improve attitudes that will lead to improvements in environmental behaviour. Graham (2000) believes that it is crucial that building professionals not only participate in the creation of projects that have low environmental impact, but equally it is important that they learn to conceive, nurture, promote and facilitate the kind of paradigm changes seen as necessary to create a sustainable society. There are however limitations as to what education can achieve on its own, for as Jucker (2002) believes, if we do not do everything we can to transform our political, economic and social systems into more sustainable structures, we might as well forget the educational part.

#### Public advocacy of climate solutions key to change governmental policy---individual change insufficient

CAG 10—Climate Change Communication Advisory Group. Dr Adam Corner School of Psychology, Cardiff University - Dr Tom Crompton Change Strategist, WWF-UK - Scott Davidson Programme Manager, Global Action Plan - Richard Hawkins Senior Researcher, Public Interest Research Centre - Professor Tim Kasser, Psychology department, Knox College, Galesburg, Illinois, USA. - Dr Renee Lertzman, Center for Sustainable Processes & Practices, Portland State University, US. - Peter Lipman, Policy Director, Sustrans. - Dr Irene Lorenzoni, Centre for Environmental Risk, University of East Anglia. - George Marshall, Founding Director, Climate Outreach , Information Network - Dr Ciaran Mundy, Director, Transition Bristol - Dr Saffron O’Neil, Department of Resource Management and Geography, University of Melbourne, Australia. - Professor Nick Pidgeon, Director, Understanding Risk Research Group, School of Psychology, Cardiff University. - Dr Anna Rabinovich, School of Psychology, University of Exeter - Rosemary Randall, Founder and director of Cambridge Carbon Footprint - Dr Lorraine Whitmarsh, School of Psychology, Cardiff University & Visiting Fellow at the, Tyndall Centre for Climate Change Research. (Communicating climate change to mass public audience, http://pirc.info/downloads/communicating\_climate\_mass\_audiences.pdf)

This short advisory paper collates a set of recommendations about how best to shape mass public communications aimed at increasing concern about climate change and motivating commensurate behavioural changes.¶ Its focus is not upon motivating small private-sphere behavioural changes on a piece-meal basis. Rather, it marshals evidence about how best to motivate the ambitious and systemic behavioural change that is necessary – including, crucially, greater public engagement with the policy process (through, for example, lobbying decision-makers and elected representatives, or participating in demonstrations), as well as major lifestyle changes. ¶ Political leaders themselves have drawn attention to the imperative for more vocal public pressure to create the ‘political space’ for them to enact more ambitious policy interventions. 1 While this paper does not dismiss the value of individuals making small private-sphere behavioural changes (for example, adopting simple domestic energy efficiency measures) it is clear that such behaviours do not, in themselves, represent a proportional response to the challenge of climate change. As David MacKay, Chief Scientific Advisor to the UK Department of Energy and Climate change writes: “Don’t be distracted by the myth that ‘every little helps’. If everyone does a little, we’ll achieve only a little” (MacKay, 2008).¶ The task of campaigners and communicators from government, business and non-governmental organisations must therefore be to motivate both (i) widespread adoption of ambitious private-sphere behavioural changes; and (ii) widespread acceptance of – and indeed active demand for – ambitious new policy interventions.¶ Current public communication campaigns, as orchestrated by government, business and non-governmental organisations, are not achieving these changes. This paper asks: how should such communications be designed if they are to have optimal impact in motivating these changes? The response to this question will require fundamental changes in the ways that many climate change communication campaigns are currently devised and implemented. ¶ This advisory paper offers a list of principles that could be used to enhance the quality of communication around climate change communications. The authors are each engaged in continuously sifting the evidence from a range of sub-disciplines within psychology, and reflecting on the implications of this for improving climate change communications. Some of the organisations that we represent have themselves at times adopted approaches which we have both learnt from and critique in this paper – so some of us have first hand experience of the need for on-going improvement in the strategies that we deploy. ¶ The changes we advocate will be challenging to enact – and will require vision and leadership on the part of the organisations adopting them. But without such vision and leadership, we do not believe that public communication campaigns on climate change will create the necessary behavioural changes – indeed, there is a profound risk that many of today’s campaigns will actually prove counter-productive. ¶ Seven Principles¶ 1. Move Beyond Social Marketing¶ We believe that too little attention is paid to the understanding that psychologists bring to strategies for motivating change, whilst undue faith is often placed in the application of marketing strategies to ‘sell’ behavioural changes. Unfortunately, in the context of ambitious pro-environmental behaviour, such strategies seem unlikely to motivate systemic behavioural change.¶ Social marketing is an effective way of achieving a particular behavioural goal – dozens of practical examples in the field of health behaviour attest to this. Social marketing is really more of a framework for designing behaviour change programmes than a behaviour change programme - it offers a method of maximising the success of a specific behavioural goal. Darnton (2008) has described social marketing as ‘explicitly transtheoretical’, while Hastings (2007), in a recent overview of social marketing, claimed that there is no theory of social marketing. Rather, it is a ‘what works’ philosophy, based on previous experience of similar campaigns and programmes. Social marketing is flexible enough to be applied to a range of different social domains, and this is undoubtedly a fundamental part of its appeal.¶ However, social marketing’s 'what works' status also means that it is agnostic about the longer term, theoretical merits of different behaviour change strategies, or the cultural values that specific campaigns serve to strengthen. Social marketing dictates that the most effective strategy should be chosen, where effective means ‘most likely to achieve an immediate behavioural goal’. ¶ This means that elements of a behaviour change strategy designed according to the principles of social marketing may conflict with other, broader goals. What if the most effective way of promoting pro-environmental behaviour ‘A’ was to pursue a strategy that was detrimental to the achievement of long term pro-environmental strategy ‘Z’? The principles of social marketing have no capacity to resolve this conflict – they are limited to maximising the success of the immediate behavioural programme. This is not a flaw of social marketing – it was designed to provide tools to address specific behavioural problems on a piecemeal basis. But it is an important limitation, and one that has significant implications if social marketing techniques are used to promote systemic behavioural change and public engagement on an issue like climate change. ¶ 2. Be honest and forthright about the probable impacts of climate change, and the scale of the challenge we confront in avoiding these. But avoid deliberate attempts to provoke fear or guilt. ¶ There is no merit in ‘dumbing down’ the scientific evidence that the impacts of climate change are likely to be severe, and that some of these impacts are now almost certainly unavoidable. Accepting the impacts of climate change will be an important stage in motivating behavioural responses aimed at mitigating the problem. However, deliberate attempts to instil fear or guilt carry considerable risk. ¶ Studies on fear appeals confirm the potential for fear to change attitudes or verbal expressions of concern, but often not actions or behaviour (Ruiter et al., 2001). The impact of fear appeals is context - and audience - specific; for example, for those who do not yet realise the potentially ‘scary’ aspects of climate change, people need to first experience themselves as vulnerable to the risks in some way in order to feel moved or affected (Das et al, 2003; Hoog et al, 2005). As people move towards contemplating action, fear appeals can help form a behavioural intent, providing an impetus or spark to ‘move’ from; however such appeals must be coupled with constructive information and support to reduce the sense of danger (Moser, 2007). The danger is that fear can also be disempowering – producing feelings of helplessness, remoteness and lack of control (O’Neill and Nicholson-Cole, 2009). Fear is likely to trigger ‘barriers to engagement’, such as denial2 (Stoll-Kleemann et al., 2001; Weber, 2006; Moser and Dilling, 2007; Lorenzoni, Nicholson-Cole & Whitmarsh, 2007). The location of fear in a message is also relevant; it works better when placed first for those who are inclined to follow the advice, but better second for those who aren't (Bier, 2001).¶ Similarly, studies have shown that guilt can play a role in motivating people to take action but can also function to stimulate defensive mechanisms against the perceived threat or challenge to one’s sense of identity (as a good, moral person). In the latter case, behaviours may be left untouched (whether driving a SUV or taking a flight) as one defends against any feelings of guilt or complicity through deployment of a range of justifications for the behaviour (Ferguson & Branscombe, 2010). ¶ Overall, there is a need for emotionally balanced representations of the issues at hand. This will involve acknowledging the ‘affective reality’ of the situation, e.g. “We know this is scary and overwhelming, but many of us feel this way and we are doing something about it”.¶ 3. Be honest and forthright about the impacts of mitigating and adapting to climate change for current lifestyles, and the ‘loss’ - as well as the benefits - that these will entail. Narratives that focus exclusively on the ‘up-side’ of climate solutions are likely to be unconvincing. While narratives about the future impacts of climate change may highlight the loss of much that we currently hold to be dear, narratives about climate solutions frequently ignore the question of loss. If the two are not addressed concurrently, fear of loss may be ‘split off’ and projected into the future, where it is all too easily denied. This can be dangerous, because accepting loss is an important step towards working through the associated emotions, and emerging with the energy and creativity to respond positively to the new situation (Randall, 2009). However, there are plenty of benefits (besides the financial ones) of a low-carbon lifestyle e.g., health, community/social interaction - including the ‘intrinsic' goals mentioned below. It is important to be honest about both the losses and the benefits that may be associated with lifestyle change, and not to seek to separate out one from the other.¶ 3a. Avoid emphasis upon painless, easy steps. ¶ Be honest about the limitations of voluntary private-sphere behavioural change, and the need for ambitious new policy interventions that incentivise such changes, or that regulate for them. People know that the scope they have, as individuals, to help meet the challenge of climate change is extremely limited. For many people, it is perfectly sensible to continue to adopt high-carbon lifestyle choices whilst simultaneously being supportive of government interventions that would make these choices more difficult for everyone. ¶ The adoption of small-scale private sphere behavioural changes is sometimes assumed to lead people to adopt ever more difficult (and potentially significant) behavioural changes. The empirical evidence for this ‘foot-in-thedoor’ effect is highly equivocal. Some studies detect such an effect; others studies have found the reverse effect (whereby people tend to ‘rest on their laurels’ having adopted a few simple behavioural changes - Thogersen and Crompton, 2009). Where attention is drawn to simple and painless privatesphere behavioural changes, these should be urged in pursuit of a set of intrinsic goals (that is, as a response to people’s understanding about the contribution that such behavioural change may make to benefiting their friends and family, their community, the wider world, or in contributing to their growth and development as individuals) rather than as a means to achieve social status or greater financial success. Adopting behaviour in pursuit of intrinsic goals is more likely to lead to ‘spillover’ into other sustainable behaviours (De Young, 2000; Thogersen and Crompton, 2009).¶ People aren’t stupid: they know that if there are wholesale changes in the global climate underway, these will not be reversed merely through checking their tyre pressures or switching their TV off standby. An emphasis upon simple and painless steps suppresses debate about those necessary responses that are less palatable – that will cost people money, or that will infringe on cherished freedoms (such as to fly). Recognising this will be a key step in accepting the reality of loss of aspects of our current lifestyles, and in beginning to work through the powerful emotions that this will engender (Randall, 2009). ¶ 3b. Avoid over-emphasis on the economic opportunities that mitigating, and adapting to, climate change may provide. ¶ There will, undoubtedly, be economic benefits to be accrued through investment in new technologies, but there will also be instances where the economic imperative and the climate change adaptation or mitigation imperative diverge, and periods of economic uncertainty for many people as some sectors contract. It seems inevitable that some interventions will have negative economic impacts (Stern, 2007).¶ Undue emphasis upon economic imperatives serves to reinforce the dominance, in society, of a set of extrinsic goals (focussed, for example, on financial benefit). A large body of empirical research demonstrates that these extrinsic goals are antagonistic to the emergence of pro-social and proenvironmental concern (Crompton and Kasser, 2009).¶ 3c. Avoid emphasis upon the opportunities of ‘green consumerism’ as a response to climate change.¶ As mentioned above (3b), a large body of research points to the antagonism between goals directed towards the acquisition of material objects and the emergence of pro-environmental and pro-social concern (Crompton and Kasser, 2009). Campaigns to ‘buy green’ may be effective in driving up sales of particular products, but in conveying the impression that climate change can be addressed by ‘buying the right things’, they risk undermining more difficult and systemic changes. A recent study found that people in an experiment who purchased ‘green’ products acted less altruistically on subsequent tasks (Mazar & Zhong, 2010) – suggesting that small ethical acts may act as a ‘moral offset’ and licence undesirable behaviours in other domains. This does not mean that private-sphere behaviour changes will always lead to a reduction in subsequent pro-environmental behaviour, but it does suggest that the reasons used to motivate these changes are critically important. Better is to emphasise that ‘every little helps a little’ – but that these changes are only the beginning of a process that must also incorporate more ambitious private-sphere change and significant collective action at a political level.¶ 4. Empathise with the emotional responses that will be engendered by a forthright presentation of the probable impacts of climate change. ¶ Belief in climate change and support for low-carbon policies will remain fragile unless people are emotionally engaged. We should expect people to be sad or angry, to feel guilt or shame, to yearn for that which is lost or to search for more comforting answers (Randall, 2009). Providing support and empathy in working through the painful emotions of 'grief' for a society that must undergo changes is a prerequisite for subsequent adaptation to new circumstances.¶ Without such support and empathy, it is more likely that people will begin to deploy a range of maladaptive ‘coping strategies’, such as denial of personal responsibility, blaming others, or becoming apathetic (Lertzman, 2008). An audience should not be admonished for deploying such strategies – this would in itself be threatening, and could therefore harden resistance to positive behaviour change (Miller and Rolnick, 2002). The key is not to dismiss people who exhibit maladaptive coping strategies, but to understand how they can be made more adaptive. People who feel socially supported will be more likely to adopt adaptive emotional responses - so facilitating social support for proenvironmental behaviour is crucial.¶ 5. Promote pro-environmental social norms and harness the power of social networks¶ One way of bridging the gap between private-sphere behaviour changes and collective action is the promotion of pro-environmental social norms. Pictures and videos of ordinary people (‘like me’) engaging in significant proenvironmental actions are a simple and effective way of generating a sense of social normality around pro-environmental behaviour (Schultz, Nolan, Cialdini, Goldstein and Griskevicius, 2007). There are different reasons that people adopt social norms, and encouraging people to adopt a positive norm simply to ‘conform’, to avoid a feeling of guilt, or for fear of not ‘fitting in’ is likely to produce a relatively shallow level of motivation for behaviour change. Where social norms can be combined with ‘intrinsic’ motivations (e.g. a sense of social belonging), they are likely to be more effective and persistent.¶ Too often, environmental communications are directed to the individual as a single unit in the larger social system of consumption and political engagement. This can make the problems feel too overwhelming, and evoke unmanageable levels of anxiety. Through the enhanced awareness of what other people are doing, a strong sense of collective purpose can be engendered. One factor that is likely to influence whether adaptive or maladaptive coping strategies are selected in response to fear about climate change is whether people feel supported by a social network – that is, whether a sense of ‘sustainable citizenship’ is fostered. The efficacy of groupbased programmes at promoting pro-environmental behaviour change has been demonstrated on numerous occasions – and participants in these projects consistently point to a sense of mutual learning and support as a key reason for making and maintaining changes in behaviour (Nye and Burgess, 2008). There are few influences more powerful than an individual’s social network. Networks are instrumental not just in terms of providing social support, but also by creating specific content of social identity – defining what it means to be “us”. If environmental norms are incorporated at this level (become defining for the group) they can result in significant behavioural change (also reinforced through peer pressure).¶ Of course, for the majority of people, this is unlikely to be a network that has climate change at its core. But social networks – Trade Unions, Rugby Clubs, Mother & Toddler groups – still perform a critical role in spreading change through society. Encouraging and supporting pre-existing social networks to take ownership of climate change (rather than approach it as a problem for ‘green groups’) is a critical task. As well as representing a crucial bridge between individuals and broader society, peer-to-peer learning circumnavigates many of the problems associated with more ‘top down’ models of communication – not least that government representatives are perceived as untrustworthy (Poortinga & Pidgeon, 2003). Peer-to-peer learning is more easily achieved in group-based dialogue than in designing public information films: But public information films can nonetheless help to establish social norms around community-based responses to the challenges of climate change, through clear visual portrayals of people engaging collectively in the pro-environmental behaviour.¶ The discourse should be shifted increasingly from ‘you’ to ‘we’ and from ‘I’ to ‘us’. This is starting to take place in emerging forms of community-based activism, such as the Transition Movement and Cambridge Carbon Footprint’s ‘Carbon Conversations’ model – both of which recognize the power of groups to help support and maintain lifestyle and identity changes. A nationwide climate change engagement project using a group-based behaviour change model with members of Trade Union networks is currently underway, led by the Climate Outreach and Information Network. These projects represent a method of climate change communication and engagement radically different to that typically pursued by the government – and may offer a set of approaches that can go beyond the limited reach of social marketing techniques.¶ One potential risk with appeals based on social norms is that they often contain a hidden message. So, for example, a campaign that focuses on the fact that too many people take internal flights actually contains two messages – that taking internal flights is bad for the environment, and that lots of people are taking internal flights. This second message can give those who do not currently engage in that behaviour a perverse incentive to do so, and campaigns to promote behaviour change should be very careful to avoid this. The key is to ensure that information about what is happening (termed descriptive norms), does not overshadow information about what should be happening (termed injunctive norms). ¶ 6. Think about the language you use, but don’t rely on language alone¶ A number of recent publications have highlighted the results of focus group research and talk-back tests in order to ‘get the language right’ (Topos Partnership, 2009; Western Strategies & Lake Research Partners, 2009), culminating in a series of suggestions for framing climate-change communications. For example, these two studies led to the suggestions that communicators should use the term ‘global warming’ or ‘our deteriorating atmosphere’, respectively, rather than ‘climate change’. Other research has identified systematic differences in the way that people interpret the terms ‘climate change’ and ‘global warming’, with ‘global warming’ perceived as more emotionally engaging than ‘climate change’ (Whitmarsh, 2009).¶ Whilst ‘getting the language right’ is important, it can only play a small part in a communication strategy. More important than the language deployed (i.e. ‘conceptual frames') are what have been referred to by some cognitive linguists as 'deep frames'. Conceptual framing refers to catchy slogans and clever spin (which may or may not be honest). At a deeper level, framing refers to forging the connections between a debate or public policy and a set of deeper values or principles. Conceptual framing (crafting particular messages focussing on particular issues) cannot work unless these messages resonate with a set of long-term deep frames.¶ Policy proposals which may at the surface level seem similar (perhaps they both set out to achieve a reduction in environmental pollution) may differ importantly in terms of their deep framing. For example, putting a financial value on an endangered species, and building an economic case for their conservation ‘commodifies’ them, and makes them equivalent (at the level of deep frames) to other assets of the same value (a hotel chain, perhaps). This is a very different frame to one that attempts to achieve the same conservation goals through the ascription of intrinsic value to such species – as something that should be protected in its own right. Embedding particular deep frames requires concerted effort (Lakoff, 2009), but is the beginning of a process that can build a broad, coherent cross-departmental response to climate change from government.¶ 7. Encourage public demonstrations of frustration at the limited pace of government action¶ Private-sphere behavioural change is not enough, and may even at times become a diversion from the more important process of bringing political pressure to bear on policy-makers. The importance of public demonstrations of frustration at both the lack of political progress on climate change and the barriers presented by vested interests is widely recognised – including by government itself. Climate change communications, including government communication campaigns, should work to normalise public displays of frustration with the slow pace of political change. Ockwell et al (2009) argued that communications can play a role in fostering demand for - as well as acceptance of - policy change. Climate change communication could (and should) be used to encourage people to demonstrate (for example through public demonstrations) about how they would like structural barriers to behavioural/societal change to be removed.

#### A strategy focused on broader claims of oppression and exploitation will never solve warming – our specific advocacy and the framing behind it are crucial to ensuring the success of all types of movements

Monbiot 8 George, English Writer and Environmental and Political Activist, 9-4, “Identity Politics in Climate Change Hell,” <http://www.celsias.com/article/identity-politics-climate-change-hell/>

If you want a glimpse of how the movement against climate change could crumble faster than a summer snowflake, read Ewa Jasiewicz’s article , published on the Guardian’s Comment is Free site. It is a fine example of the identity politics that plagued direct action movements during the 1990s, and from which the new generation of activists has so far been mercifully free. Ewa rightly celebrates the leaderless, autonomous model of organising that has made this movement so effective. The two climate camps I have attended – this year and last – were among the most inspiring events I’ve ever witnessed. I am awed by the people who organised them, who managed to create, under extraordinary pressure, safe, functioning, delightful spaces in which we could debate the issues and plan the actions which thrust Heathrow and Kingsnorth into the public eye. Climate camp is a tribute to the anarchist politics that Jasiewicz supports. But in seeking to extrapolate from this experience to a wider social plan, she makes two grave errors. The first is to confuse ends and means. She claims to want to stop global warming, but she makes that task 100 times harder by rejecting all state and corporate solutions. It seems to me that what she really wants to do is to create an anarchist utopia, and use climate change as an excuse to engineer it. Stopping runaway climate change must take precedence over every other aim. Everyone in this movement knows that there is very little time: the window of opportunity in which we can prevent two degrees of warming is closing fast. We have to use all the resources we can lay hands on, and these must include both governments and corporations. Or perhaps she intends to build the installations required to turn the energy economy around - wind farms, wave machines, solar thermal plants in the Sahara, new grid connections and public transport systems - herself? Her article is a terryifying example of the ability some people have to put politics first and facts second when confronting the greatest challenge humanity now faces. The facts are as follows. Runaway climate change is bearing down on us fast. We require a massive political and economic response to prevent it. Governments and corporations, whether we like it or not, currently control both money and power. Unless we manage to mobilise them, we stand a snowball’s chance in climate hell of stopping the collapse of the biosphere. Jasiewicz would ignore all these inconvenient truths because they conflict with her politics. “Changing our sources of energy without changing our sources of economic and political power”, she asserts, “will not make a difference. Neither coal nor nuclear are the “solution”, we need a revolution.” So before we are allowed to begin cutting greenhouse gas emissions, we must first overthrow all political structures and replace them with autonomous communities of happy campers. All this must take place within a couple of months, as there is so little time in which we could prevent two degrees of warming. This is magical thinking of the most desperate kind. If I were an executive of E.On or Exxon, I would be delighted by this political posturing, as it provides a marvellous distraction from our real aims. To support her argument, Jasiewicz misrepresents what I said at climate camp. She claims that I “confessed not knowing where to turn next to solve the issues of how to generate the changes necessary to shift our sources of energy, production and consumption”. I confessed nothing of the kind. In my book Heat I spell out what is required to bring about a 90% cut in emissions by 2030. Instead I confessed that I don’t know how to solve the problem of capitalism without resorting to totalitarianism. The issue is that capitalism involves lending money at interest. If you lend at 5%, then one of two things must happen. Either the money supply must increase by 5% or the velocity of circulation must increase by 5%. In either case, if this growth is not met by a concomitant increase in the supply of goods and services, it becomes inflationary and the system collapses. But a perpetual increase in the supply of goods and services will eventually destroy the biosphere. So how do we stall this process? Even when usurers were put to death and condemned to perpetual damnation, the practice couldn’t be stamped out. Only the communist states managed it, through the extreme use of the state control Ewa professes to hate. I don’t yet have an answer to this conundrum. Does she? Yes, let us fight both corporate power and the undemocratic tendencies of the state. Yes, let us try to crack the problem of capitalism and then fight for a different system. But let us not confuse this task with the immediate need to stop two degrees of warming, or allow it to interfere with the carbon cuts that have to begin now. Ewa’s second grave error is to imagine that society could be turned into a giant climate camp. Anarchism is a great means of organising a self-elected community of like-minded people. It is a disastrous means of organising a planet. Most anarchists envisage their system as the means by which the oppressed can free themselves from persecution. But if everyone is to be free from the coercive power of the state, this must apply to the oppressors as well as the oppressed. The richest and most powerful communities on earth - be they geographical communities or communities of interest - will be as unrestrained by external forces as the poorest and weakest. As a friend of mine put it, “when the anarchist utopia arrives, the first thing that will happen is that every Daily Mail reader in the country will pick up a gun and go and kill the nearest hippy.” This is why, though both sides furiously deny it, the outcome of both market fundamentalism and anarchism, if applied universally, is identical. The anarchists associate with the oppressed, the market fundamentalists with the oppressors. But by eliminating the state, both remove such restraints as prevent the strong from crushing the weak. Ours is not a choice between government and no government. It is a choice between government and the mafia. Over the past year I have been working with groups of climate protesters who have changed my view of what could be achieved. Most of them are under 30, and they bring to this issue a clear-headedness and pragmatism that I have never encountered in direct action movements before. They are prepared to take extraordinary risks to try to defend the biosphere from the corporations, governments and social trends which threaten to make it uninhabitable. They do so for one reason only: that they love the world and fear for its future. It would be a tragedy if, through the efforts of people like Ewa, they were to be diverted from this urgent task into the identity politics that have wrecked so many movements.