

# Struggling for Sustainability: The Devolution of Natural Resources Management and its Effect on Malawi's Fisheries

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*By:* John White

*Advising Professor:* John Jeffries

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## INTRODUCTION

Malawi has been blessed with several large fresh water bodies with unique ecological characteristics. Every day, the citizens of Malawi rely directly on the fish caught in these water bodies for essential nutrition, helping to stave off the malnutrition that is rampant in sub-Saharan Africa. The natural fish stocks, however, are now imperiled by an exploding population, leading to unsustainable overexploitation that has put the fisheries on track for total failure. The direct connection between the health of the fisheries and the health of Malawians means that the management of these natural resources is of the utmost importance.

Decentralization, the policy of allocating governmental responsibility and resources to local governments, has been a policy pursued in Malawi since the late 20th century. This has been encouraged by well-intentioned donor countries like Germany, Iceland, and the EU Delegation under the belief that centralized power, especially in developing countries, can have a deleterious effect on a nation's citizens.<sup>1</sup> However, natural resource governance is one arena where the replacement of national governance with small-scale local governance ultimately does more harm than good to the health of the country.<sup>2</sup> Malawi is coming to learn this with its "co-management" program for its national fisheries that has not reversed the downward trend in Malawi's major fisheries. As fish stocks continue their decline unabated, Malawi's failure to

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<sup>1</sup> The brutal dictatorships of Robert Mugabe in South Africa and Muammar Gaddafi in Libya, among others, serve as notable examples of the perils of too-strong central governments. *See generally* John-Mary Kauzya, *Political Decentralization in Africa: Experiences of Uganda, Rwanda, and South Africa*, U.N. PUB. ADMIN. NETWORK PUB. PAPERS (Dec. 2007) available at <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan028411.pdf> (encouraging the move towards political decentralization in Africa, concluding that political decentralization has strengthened local communities in cases studied).

<sup>2</sup> *See, e.g.*, Marcus Lane, *Decentralization or Privatization of Environmental Governance?*, 19 J. RURAL STUD. 283 (2003) (concluding from case studies that decentralization of natural resource governance fails to achieve its major goals); Arun Agrawal and Krishna Gupta, *Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai*, 33 WORLD DEV. 1101 (2005) (finding that decentralization of natural resource management actually has an anti-democratic effect, concentrating power in a small group of savvy users).

reform its decentralized approach puts its citizens' health at risk and runs afoul of its legal commitments under domestic and international law.

## INTERNATIONAL LEGAL FRAMEWORK FOR ENVIRONMENTAL GOVERNANCE

Malawi is bound to follow the dictates of treaties it ratifies and customary international law. Customary law “consists of rules of law derived from the consistent conduct of States acting out of the belief that the law required them to act that way.”<sup>3</sup> It is divined from widespread repetition by states and corresponding actions (state practice) taken out of a sense of legal obligation (*opinio juris*) by a significant number of states.<sup>4</sup> While individual agreements vary in their binding effect, when taken in sum, a consensus in national actions taken and documents signed can create binding custom on all sovereign states.<sup>5</sup>

Below is an overview of international agreements, both binding and non-binding, addressing environmental governance. While many of these treaties and declarations overlap in their provisions, five central justifications emerge for the duty to protect the environment and engage in sustainable practices: the inherent value of the environment, the rights of humanity and future generations to exist in a clean environment, sustainable development as a means to alleviate poverty, a healthy environment as a precondition to other fundamental human rights, and the protection of cultural rights and traditional practices.

### *Environmental Protection as International Law—Ecocentric*

Most directly, the 1992 Convention on Biological Diversity requires, with specificity, that its signatories come up with sustainable practices and integrate them into their national policies. The Convention focuses on environmental sustainability as an inherent good,

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<sup>3</sup> SHABTAI ROSENNE, PRACTICE AND METHODS OF INTERNATIONAL LAW 55 (Oceana Publications, 1984).

<sup>4</sup> Anthea Elizabeth Roberts, *Traditional and Modern Approaches to Customary International Law: A Reconciliation*, 95 AM. J. INT'L L. 757 (2001) (“[A]ctions can form custom only if accompanied by an articulation of the legality of the action (*opinio juris*).”).

<sup>5</sup> *Id.*, at 758.

protecting the environment for the *environment's* sake, not specifically for *humanity's* sake, and may thereby be classified as an ecocentric (as opposed to anthropocentric) model.<sup>6</sup> Specifically, the Convention mandates that its contracting parties:

Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes . . . and [i]ntegrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.<sup>7</sup>

In addition, the Convention on Biological Diversity requires that contracting parties “[r]egulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use.”<sup>8</sup> Many of its provisions are prefaced by conditional language, such as “as far as possible and appropriate,” which softens the regulations.<sup>9</sup> However, its obligations are mandatory and at the bare minimum require *some* action to show compliance with its dictates, at least establishing an environmental agency to oversee implementation of the treaty provisions.<sup>10</sup> The treaty entered into force in 1993, and currently 193 nations are parties, including Malawi. Of the United Nations’ member-states, only the United States, the Vatican, and Andorra are not parties to the Convention. So for 98.5% of the world, including Malawi, enacting policies on environmental sustainability, specifically in regards to protecting biological diversity, is a legal mandate.

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<sup>6</sup> Though it does mention human use as an important purpose for sustainable practices, it states that biodiversity “underpins sustainable development in many ways; poverty eradication, food security, provision of fresh water, soil conservation and human health all depend directly upon maintaining and using the world’s biological diversity and therefore sustainable development cannot be achieved without the conservation and sustainable use of biological diversity.” Convention on Biological Diversity, para. 5, June 5, 1992, 31 I.L.M. 818.

<sup>7</sup> Convention on Biological Diversity art. 6, June 5, 1992, 31 I.L.M. 818.

<sup>8</sup> *Id.* art. 8(2).

<sup>9</sup> *See, e.g., id.*, articles 6, 8, 9, 10, 14.

<sup>10</sup> *Id.*, art. 8.

Prior to the Convention on Biological Diversity, a non-binding document that nonetheless purports to demarcate norms for environmental protection was established as the “World Charter for Nature” in 1982. It is also distinctly ecocentric, stating in its principal article, “Nature shall be respected and its essential processes *shall not* be impaired.”<sup>11</sup> It goes on to assert that “the population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded.”<sup>12</sup> Note that there is no caveat for the benefit of human use. “Ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by man, shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they coexist.”<sup>13</sup> This Charter was adopted by the UN General Assembly nearly unanimously, the United States being the sole vote against. It is intended to set forth “principles of conservation by which all human conduct affecting nature is to be guided and judged.”<sup>14</sup> This is a non-binding declaration, but it has been characterized as “an important symbolic expression of an intent among nations to achieve a more harmonious and sustainable relationship between humanity and the rest of the biosphere.”<sup>15</sup>

An African regional treaty that is ratified by Malawi and that reflects the same ecocentric model is the African Convention on the Conservation of Nature and Natural Resources, adopted in 1969 and amended in 2003.<sup>16</sup> The specific provisions of the Convention require conservation of natural resources not just to the extent that they are necessary to human development, but to the furthest extent possible without actually being detrimental to humans, as opposed to

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<sup>11</sup> World Charter for Nature, Gen. Princ. 1, Nov. 9, 1982, 22 I.L.M. 455, U.N. Doc. Res. 37/7 (emphasis added).

<sup>12</sup> *Id.*, para. 2..

<sup>13</sup> *Id.* Princ. 4.

<sup>14</sup> U.N. Doc. Res. 37/7, 28 October 1982.

<sup>15</sup> LYNTON CALDWELL, INTERNATIONAL ENVIRONMENTAL POLICY 98 (Duke Univ. Press 1996).

<sup>16</sup> African Convention on the Conservation of Nature and Natural Resources, entered into force Apr. 16, 1970, revised July 11, 2003, 1001 U.N.T.S. 3.

presuming unrestricted development until the development proves unsustainable.<sup>17</sup> The Convention requires specific measures be taken, including the establishment of “land-use plans based on scientific investigations,”<sup>18</sup> a permit system for fishing activities, a mandatory closed fishing seasons, and a ban on poison and specific nets in fisheries.<sup>19</sup> Throughout the Convention are requirements that all state actions should have environmental sustainability in mind, and both policies and objective results must reflect a primary goal of a healthy ecosystem.<sup>20</sup>

### *Environmental Protection as Human Right— Anthropocentric*

Another approach taken by some international agreements, working either in concert with the ecocentric approach or in contrast, is to focus on the protection of the environment for humanity’s use. Ultimately the result looks very much the same in that overexploitation would deprive others’ of their ability to access the same resources and harvest the same opportunities, and therefore the goal of anthropocentric models is also to limit environmental exploitation to only what is necessary for the current generation. Ecocentric models default to no or little interference with the natural environment without necessity, tending to greater environmental conservation instead of greater economic development. Anthropocentric treaties, however, place the guiding principle not on environmental protection for its own sake, but for human’s use, often referencing to the duty of the present generation towards future generations, while presuming the right to utilize natural resources.

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<sup>17</sup> See, e.g., *id.* art. 7. (“Parties shall manage their water resources so as to maintain them at the highest possible quantitative and qualitative levels.”), art. IX para. 1 (“Parties shall maintain and enhance species and genetic diversity of plants and animals. . .”).

<sup>18</sup> African Convention on Nature and Natural Resources, *supra* note 16, art. 4(3)(a).

<sup>19</sup> *Id.* art. 9(3)(b)(i) and Annex 3.

<sup>20</sup> *Id.* art. 14, para. 1 (“Parties shall ensure that conservation and management of natural resources are treated as an integral part of national and/or local development plan. . . . in order to promote sustainable development.”), art XI, para. 2 (“[Parties shall] manage harvestable populations outside [conservation areas] in a sustainable manner, compatible with and complementary to other sustainable land uses.”) art. IX para. 3 (“States are bound to adopt legislation . . . . under which taking is regulated with a view to ensuring that the use of any population is sustainable.”).

The Declaration of the United Nations Conference on the Human Environment (UNCHE), also known as the Stockholm Conference, was called by the General Assembly in 1972. The result of this meeting of 113 countries proclaimed: “Man has the fundamental right to . . . an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.”<sup>21</sup> Here the foundational principle is that the environment exists to serve humanity, not vice-versa, but that people have a *right* to an environment that can sustain them. This conference did not produce a binding covenant, but its declaration reflected the consensus of the 113 nations present, and the primary importance of a healthy environment that is sustained both for present and future generations formed the foundation for future international agreements that take steps to implement and enforce this right.

An example of a binding treaty that recognizes the responsibility of the present generation to preserve the environment for future generations is found in the 1979 Convention on the Conservation of Migratory Species of Wild Animals, which claims that “each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and where utilized, is used wisely.”<sup>22</sup> Likewise, there is a declaration from the UN that focused primarily on the duties that the present generation owes to the future, aptly named the “Declaration of the Responsibilities of the Present Generations towards Future Generations.”<sup>23</sup> The declaration is primarily focused on conservation, particularly in Article 5 that, among other principles, makes it explicit that the present generations should “preserve for

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<sup>21</sup> Declaration of the UN Conference on the Human Environment, Princ. 1, U.N. Doc. A/Conf.48/14/Rev.1 (1972).

<sup>22</sup> Convention on the Conservation of Migratory Species of Wild Animals, Preamble, June 23, 1979, 19 I.L.M. 11, 29.

<sup>23</sup> Declaration on the Responsibilities of the Present Generations Towards Future Generations, U.N. 29 C/Res. 44 (Nov. 12, 1997). *See also* Protection of the Global Climate for Present and Future Generations of Mankind, 1989, UN A/Res/43/53.

future generations natural resources necessary for sustaining human life and for its development.”<sup>24</sup>

A regional international treaty binding African nations (including Malawi) to protect the environment for their people is the African Charter on Human and Peoples’ Rights, which in Article 24 declares, “All peoples shall have a right to a generally satisfactory environment favorable to their development.”<sup>25</sup> This would preclude practices that would destroy an ecosystem that people rely on for subsistence, and it presumes an environment free from toxic levels of deleterious substances. It is the first legally binding document to make a clean environment an enforceable human right.<sup>26</sup> No cases have yet been brought before the African Commission on Human and People’s Rights (the enforcing institutional body created by the African Charter) challenging a nation’s failure to provide for this right, however, so the extent to which this codification creates a revolutionary new legal paradigm is not yet clear.

The lack of enforcement for environmental rights is not universal. The Aarhus Convention, a binding regional convention that has been ratified by forty-four nations, declares in its opening Article that every person has a “right to live in an environment adequate to his or her health and well being.”<sup>27</sup> It goes on to make this right enforceable against *anyone* who might be acting to undermine this right, mandating that any action *or omission* by both public agencies and *private persons* that contravene environmental provisions be open to a public challenge with

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<sup>24</sup> *Id.* art. 5(3).

<sup>25</sup> African Charter on Human and Peoples’ Rights art. 24, June 27, 1981, 1520 U.N.T.S. 217.

<sup>26</sup> Shelton, Dinah, *Human Rights, Environmental Rights, and the Right to Environment*, 28 STAN. J. INT’L L. 130, 112 (1991) (comparing international legal documents that pertained to environmental rights, finding the African Charter to be the first). [need page cite] While it has not been vindicated by a judicial body, the right enshrined in Article 24 is endorsed elsewhere, incorporated by reference in the African Convention on the Conservation of Nature and Natural Resources (discussed above). Article III of the Convention notes “the right of all peoples to a satisfactory environment.” African Convention, *supra* note 16, art. 3.

<sup>27</sup> Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, art. 1, June 25, 1998, 2161 U.N.T.S. 447 .

effective remedies (including injunctive relief) that are fair, equitable, timely and affordable.<sup>28</sup>

This convention shows just how high nations have set the bar in creating enforceable positive environmental rights for their citizens.

*Environmental Protection to Alleviate Poverty— Sustainable Development*

Even if there is a recognized right to a clean environment, the need to stimulate the economy in developing countries to bring the nation from the brink of economic collapse will necessarily trump environmental concerns in policymakers' minds. There is, however, a growing recognition of the link between environmental degradation and extreme poverty. Where people do not have resources to develop, they languish in poverty. Concomitantly, one must recognize that rapidly growing populations in extreme poverty is a cause of environmental overexploitation. "Poor families often have to meet urgent short-term needs, prompting them to 'mine' natural capital. . . . The poor are both victims and agents of environmental damage."<sup>29</sup>

"Sustainable development" is the policy and legal concept tailored to solve this poverty-environmental degradation link. The term is generally considered to have been coined by the 1987 Brundtland Report, entitled "Our Common Future."<sup>30</sup> Sustainable development demands that economic decisions be made with protecting the environment as a central concern, and simultaneously that environmental decisions be made with developing economies as a central concern. Generally, sustainable development incorporates two separate concepts: the concept of the essential needs of the world's poor, to which overriding priority should be given; and the idea

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<sup>28</sup> *Id.* art. 9.

<sup>29</sup> THE WORLD BANK, WORLD DEVELOPMENT REPORT 1992: DEVELOPMENT AND THE ENVIRONMENT 52 (World Bank and Oxford University Press, 1992), available at [http://wdronline.worldbank.org/worldbank/a/c.html/world\\_development\\_report\\_1992/chapter\\_overview](http://wdronline.worldbank.org/worldbank/a/c.html/world_development_report_1992/chapter_overview).

<sup>30</sup> Report of the World Commission on Environment and Development: Our Common Future, U.N. Doc. A/42/427 (1987), available at <http://www.un-documents.net/wced-ocf.htm> (identifying the need for, and defining for the first time, sustainable development as a guiding principle of international law) [hereinafter Our Common Future]; PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 253 (2d ed. 2003) (citing the Our Common Future as the first use of "sustainable development" in a legal context).

of limitations imposed on the environment's ability to meet present and future needs.<sup>31</sup> The Brundtland Report specifically addressed the finite nature of fish, even singling out Lake Malawi for the fact that its unique biodiversity (500 species of cichlids alone) is under threat from industrial pollution.<sup>32</sup> Pessimistically, it goes on to generally claim that “[t]here are indications that much of the naturally available freshwater fish stocks are fully exploited or damaged by pollution,” yet “fisheries . . . are critical to food security in that they provide both protein and employment.”<sup>33</sup> The melding of environmental concern (species extinction) and socio-economic concern (poor are unable to acquire food) are both addressed by the idea of sustainable development.

The 1992 UN Conference on Environment and Development (UNCED) provided the seminal movement for sustainable development law. It marked the new high point in international consensus in sustainable practices through the Rio Declaration and “Agenda 21,” and it established the Commission on Sustainable Development to follow through with commitments made at the Conference. Agenda 21, the Rio Declaration and the Commission on Sustainable Development were all adopted by 178 nations. While none of these create legally binding obligations on their face, the consensus they achieved on broad principles create a strong foothold for claims that sustainable practices are a dictate of customary international law.

The Rio Declaration set out twenty-seven principles that were designed to guide implementation of sustainable development, and it points explicitly to the idea of investing and exercising “the right to development . . . so as to equitably meet developmental and

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<sup>31</sup> Our Common Future, chap. 2,4.

<sup>32</sup> *Id.*, chap. 6, Box 6.1.

<sup>33</sup> *Id.* chap 3.5.

environmental needs of present and future generations.”<sup>34</sup> It has elements of both the ecocentric and anthropocentric models. Its first Principle is that “human beings are at the center of concerns for sustainable development” and that they are “entitled to a healthy and productive life in harmony with nature.”<sup>35</sup> However, it also endorses the “precautionary principle,” which specifies that actions harmful to the environment may not be taken without scientific consensus that the action is *not* harmful. This places the burden of proof on those who would take the action, instead of requiring environment protectors to prove that the action *will* cause harm.<sup>36</sup>

The Conference also developed “Agenda 21,” a comprehensive, detailed plan to implement sustainable development goals. Agenda 21 is not a legally binding document, but it claims to “reflect a global consensus and political commitment at the highest level.”<sup>37</sup> As such, it may lay claim to further enshrining principles in customary international law. The Agenda is made up of forty chapters detailing implementation of sustainable practices into every facet of economic and even social policies. It stretches to include strategies for changing consumer habits,<sup>38</sup> public education,<sup>39</sup> developing sustainable transportation systems,<sup>40</sup> and high-tech infrastructure,<sup>41</sup> while also managing the more traditional environmental concerns of the atmosphere,<sup>42</sup> forests,<sup>43</sup> mountain ecosystems,<sup>44</sup> oceans,<sup>45</sup> management of toxic chemicals,<sup>46</sup> all

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<sup>34</sup> Rio Declaration on Environment and Development, princ. 3, June 14, 1992, U.N. Doc. A/CONF.151/5/Rev.1 [hereinafter Rio Declaration]. This Principle is significant in that it is the first time that the right to development has been affirmed in global consensus. While future generations may not have standing to sue on behalf of themselves (as they are not in existence yet) present generations may be able to enforce these covenants against the contracting parties *on behalf of* future generations.

<sup>35</sup> Rio Declaration, princ. 1. Note that this falls short of declaring a *right* to a clean environment.

<sup>36</sup> Rio Declaration, princ. 15.

<sup>37</sup> UNCED Report A/CONF.151/26/Rev.1 (Vol. I) (1993) [hereinafter Agenda 21], chap. 1, para. 3.

<sup>38</sup> *Id.*, chap. 4.

<sup>39</sup> *Id.*, chap. 21.

<sup>40</sup> *Id.*, chap. 5.

<sup>41</sup> *Id.*, chap. 36.

<sup>42</sup> *Id.*, chap. 9.

<sup>43</sup> Agenda 21, chap. 11.

<sup>44</sup> *Id.*, chap. 13.

<sup>45</sup> *Id.*, chap. 17.

with the ultimate goal of alleviating poverty via preserved natural resources.<sup>47</sup> While the Rio Declaration was focused specifically on sustainable development as an economic/environmental force for developing countries, Agenda 21 is a global framework that would incorporate sustainable environmental practices into *every* decision and facet of governance in the 21st century and would essentially implement conservation-minded policies to every level of society.

The Commission on Sustainable Development (CSD) was also created by the Conference to oversee implementation of Agenda 21 and provides guidance on complying with sustainable development requirements. The CSD collects annual reports from participating countries in how crucial sectors of poverty-environment overlap (like fisheries) are faring. Compliance with reporting mechanisms is one indicator of the fact that nations consider their endorsement of the Agenda as creating obligations on their part, contributing to the consensus creating customary international law.

The status of sustainable development is not just an empty principle recited in the idealistic portions of international declarations. It has enforceable legal consequences, as held by the International Court of Justice in a case brought by Hungary and Slovakia regarding an abandoned river project. The ICJ said:

Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind - for present and future generations of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development. For the purposes of the present case, this means that the Parties together should look afresh at the effects

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<sup>46</sup> *Id.*, chap. 19.

<sup>47</sup> *Id.*, chap. 1.

on the environment of the [project and] they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube [and other environmental risks that must be remedied].<sup>48</sup>

The ICJ here acknowledged the responsibilities Hungary and Slovakia owed to each others' citizens (and to the environment) under the flag of sustainable development. That led the court to its decision that the environmental harm caused by the halted development must be reversed, in order to protect the economic interests of those who rely on the Danube and its supply of water— those who would typically fall in the bottom sector of the socioeconomic spectrum.

### *Environmental Protection as Pre-condition to Fundamental Human Rights*

An argument for environmental protection that derives from first principles of human rights law makes intuitive sense. Here, the legal basis for environmental protection has already been established, but a first-principles argument may serve as a backstop, particularly in nations that may claim that they are not in a position to take action on securing the natural environment as a positive human right (where mandates are not immediately binding but should be met as it becomes economically and politically feasible). The primary human right is the right to life.<sup>49</sup> The right is non-derogable and universally recognized as a mandate of customary law.<sup>50</sup>

When one's food and sustenance come directly from natural resources, as they do in most of Malawi, the ability to live and experience an adequate standard of living is directly tied to the availability of natural resources to provide nutrition, water and cooking fuel. If fisheries were totally emptied of fish, for example, Malawians would lose a vital source of calories, protein and

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<sup>48</sup> *Case Concerning the Gabčíkovo-Nagymaros Dam* (25 September 1997) (*Hungary v. Slovakia*) I.C.J. Rep., 37 I.L.M. 162 (1998).

<sup>49</sup> Universal Declaration of Human Rights, art. 3, Dec. 12, 1948, G.A. Res. 217A, U.N. Doc A/810 (“Everyone has the right to life, liberty and security of person.”) [hereinafter UDHR]; International Covenant on Civil and Political Rights, Art. 6, Dec. 16, 1966, G.A. Res. 2200A (XXI), U.N. Doc. A/6316 (“Every human being has the inherent right to life. . . . No one shall be arbitrarily deprived of his life.”).

<sup>50</sup> *See In Re Roach*, Case 9647, Inter-Am.C.H.R. 147, 166, OEA/Ser.L/V/II.71, doc. 9 rev. 1 (1987) (finding the right to life a non-derogable fundamental human right, in context of a juvenile death penalty case).

micronutrients, leading to massive malnutrition (already a longstanding problem in Malawi). Some scholars point out that political rights require some amount of health to be exercised, and that the “right” to a sustainable environment must then be a pre-condition to more traditional political rights.<sup>51</sup>

Another principle built into international human rights law is the “right to adequate food” recognized in the Universal Declaration on Human Rights and the International Covenant on Economic, Social and Cultural Rights.<sup>52</sup> The right to adequate food is explicated further in the Committee on Economic Social and Cultural Rights’ (ECOSOC) General Comment 12: “[T]he core content of the right to adequate food implies: the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals . . . . *acceptable within a given culture*; [and] the accessibility of such food *in ways that are sustainable*.”<sup>53</sup> The reference to food acceptable within a given culture is relevant here in that the chambo is a staple fish of the many cultures in Malawi, and its disappearance means the deterioration of a traditional meal, which must be replaced by cheaper alternatives. “Accessibility of such food in ways that are sustainable” implies government assistance in determining sustainable harvest techniques and a management framework to ensure this protection.

#### *Environmental Protection as Cultural Right*

A fine-tuned legal claim may be made specific to Malawians and the protection of their environment—specifically their fisheries—based on their right to culture. Article 1 of the International Covenant on Economic Social and Cultural Rights (ICESCR) states plainly, “In no

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<sup>51</sup> See, e.g., Dinah Shelton, *Human Rights, Environmental Rights, and the Right to Environment*, 28 STAN. J. INT’L L. 103, 112-13 (1991) (describing various human rights that rely on a healthy environment in order to be fulfilled, and the position of the Human Rights Committee that supports the “precondition” view).

<sup>52</sup> International Covenant on Economic, Social and Communal Rights, art. 11, Dec. 16, 1966, G.A. Res. 2200A (XXI), U.N. Doc. A/6316; UDHR, Art. 25 [hereinafter ICESCR].

<sup>53</sup> U.N. ECOSOC, Human Rights Commission, General Comment 12, para. 8, E/C.12/1999/5 (1999) (emphasis added).

case may a people be deprived of its own means of subsistence.”<sup>54</sup> Subsistence in Malawi relies on fishing, which clearly relies on access to natural resources. Article 15 of the same binding Covenant also recognizes “the right of everyone to take part in cultural life.”<sup>55</sup> Most Malawians may be considered indigenous peoples, living in a historically close connection to the natural environment. The tribal groups of the Chewa, Tonga and Yao live throughout Malawi on the shores of all of Malawi’s waterways, and each are considered an “indigenous” group while collectively making up the majority of Malawi’s population.<sup>56</sup> As such they have the right to partake in cultural activities, including traditional means of subsistence, which require a sustainable environment.

Without electricity, living in huts made of mud, and growing the majority of their own food, any disruptions in the natural environment would be devastating to Malawians. Of the majority of communities in Malawi, it can be fairly said that, “To be sure, possessing little or no technological capability, these communities *are* their environment—profoundly integrated and deeply dependent.”<sup>57</sup> Recognizing this dependence, the United Nations Declaration on the Rights of Indigenous Peoples declared outright that “Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection.”<sup>58</sup> While not binding per se, since its adoption the Declaration on the Rights of Indigenous Peoples has been universally accepted, thus

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<sup>54</sup> ICESCR, Art. 1.

<sup>55</sup> ICESCR, Art. 15.

<sup>56</sup> Minority Rights Group International, *World Directory of Minorities and Indigenous Peoples - Malawi : Overview*, (2007) available at <http://www.unhcr.org/refworld/docid/4954ce4623.html> (last accessed 20 April 2011).

<sup>57</sup> William Andrew Shutkin, *International Human Rights Law and the Earth: The Protection of Indigenous Peoples and the Environment*, 31 VA. J. INT'L L. 479, 480 (1991).

<sup>58</sup> U.N Declaration on the Rights of Indigenous Peoples, Art. 29, Sept. 13, 2007, U.N. Doc. A/RES/61/295.

making it parallel to the Universal Declaration of Human Rights in representing a consensus of international legal norms.<sup>59</sup>

In sum, Malawi is clearly obligated to ensure the long-term sustainability of its fisheries in order to comply with international law, as expressed in both binding treaties and through the international consensus expressed in environmental declarations, charters, and principles of human rights.

### **MALAWI'S DOMESTIC IMPLEMENTING LAWS**

Malawi is a party to nearly every binding convention and voted for the adoption for every major declaration cited above, and is party to dozens more similar documents, all of which bring with them certain obligations of national implementation.<sup>60</sup> Malawi has accordingly implemented the principles of those documents into its national policies, but it falls short in its implementing legislation, where the vague principles of sustainability and conservation should actually come into practice as environmental laws.

#### *National Constitution*

Malawi has excellent language in its Constitution for environmental protection, declaring in its “Fundamental Principles” chapter that:

The State shall actively promote the welfare and development of the people of Malawi by progressively adopting . . . legislation aimed . . . to manage the environment responsibly in order to--

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<sup>59</sup> Press Release, U.N. Indigenous Peoples Indigenous Voices (2007), *available at* [http://www.un.org/esa/socdev/unpfii/documents/faq\\_drips\\_en.pdf](http://www.un.org/esa/socdev/unpfii/documents/faq_drips_en.pdf).

<sup>60</sup> “Malawi is a party and adheres to internationally accepted principles of the 1972 Stockholm Declaration, the 1992 Rio Declaration and the WEHAB (Water, Energy, Health, Agriculture and Biodiversity) principles of 2002 as adopted by the United Nations Conferences. Malawi is also a signatory to a number of international environmental conventions and protocols such as the Convention on International Plant Protection; Convention on Wetlands of International Significant; Convention Concerning the Protection of the World Cultural and Natural Heritage; Convention on the Conservation of Migratory Species of Wild Animals; Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); African Convention on Conservation of Nature and Natural Resources; FAO International Undertaking on Plant and Genetic Resources; United Nations Convention on the Law of the Sea; the Vienna Convention and Montreal Protocol for Protection of the Ozone Layer; Convention on Biological Diversity; Convention on Climate Change; and the Convention on Combating Desertification.” Government of Malawi, National Environmental Policy (2004).

- (i) prevent the degradation of the environment;
- (ii) provide a healthy living and working environment for the people of Malawi;
- (iii) accord full recognition to the rights of future generations by means of environmental protection and the *sustainable development of natural resources*;
- and
- (iv) conserve and enhance the biological diversity of Malawi.<sup>61</sup>

The preface that the protection of the environment will be “progressively” achieved removes the ability of citizen groups to bring a constitutional case against the government for its failure to immediately live up to these ideals. But Malawi has moved generally in the direction of fulfillment by creating several national departments directed to implement conservationist policies, like the Department of National Parks and Wildlife, the Environmental Affairs Department, the Fisheries Department and the Forestry Department, and the Department of Land Conservation.

#### *National Environmental Policy*

Promisingly, Malawi’s National Environmental Policy incorporates all of the aspirations of international environmental law declarations and treaties. Furthermore, it goes the step that international documents have skirted for decades, holding that “*Every person has a right to a clean and healthy environment and a duty to maintain and enhance the environment.*”<sup>62</sup> The Policy candidly reports the threats of overfishing and species extinction, and aspires to the principle that “the use of renewable natural resources should be sustainable for the benefit of the present and future generations.”<sup>63</sup>

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<sup>61</sup> Malawi Constitution, chap. III(d), “Principles of National Policy: The Environment,” adopted May 16, 1994 (emphasis added).

<sup>62</sup> Government of Malawi, National Environmental Policy, Chapter 2.3(a), (2004).

<sup>63</sup> *Id.* at 2.3(f).

*Malawi Growth and Development Strategy*

Built into the Malawi Growth and Development Strategy (2006-2011) is the acknowledgment that:

[C]onservation of natural resources is an important factor that will contribute to the achievement of the sustained economic growth and development objectives of the [nation]. It is recognised that weak management of natural resources is a major problem in Malawi. This is exacerbated by population growth, environmental degradation, and encroachment of agricultural and settlement activities on forestry and marginal lands. . . . The goal is to improve management of fish species, forestry and wildlife biodiversity and environmental degradation and conserve the natural resource base, while contributing to economic growth.<sup>64</sup>

Without using the phrase “sustainable development,” this framing of Malawi’s goals, simultaneously protecting the environment while stimulating the economy, ably translates the principle from Agenda 21 and its sibling documents into a domestic action plan. There are sections that directly address forests and fisheries as well, both pointing out the hindrances (overexploitation, poor enforcement capacity)<sup>65</sup> and outlining broad goals of “improving productivity of the . . . sector[s], while balancing it with sustainable practices.”<sup>66</sup> With this document and the National Environmental Policy, the broad-based policy papers of the government are directly in line with the obligations it took on as party to the litany of international environmental law documents outlined above. But it is a crucial and difficult step to go from sound policies to effective implementation.

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<sup>64</sup> Malawi Growth and Development Strategy, §5.1.4 (2007).

<sup>65</sup> *Id.* §5.1.4(c).

<sup>66</sup> *Id.* §5.1.4(b).

## *Fisheries Conservation and Management Act*

The legislation that most directly impacts Malawian fisheries is the Fisheries Conservation and Management Act (“Fisheries Act”), amended and updated in 1997.<sup>67</sup> The Fisheries Act sets out some provisions that comport with international dictates, including banning devices or methods that poison, stun, or numb fish to make them more susceptible to harvest, and a general mandate to fisheries officers to set a closed season.<sup>68</sup> However, there is no mention of maximum sustainable yields or concrete limits on catches for Malawi’s bodies of water aside from the general directive to Department of Fisheries officers that they are responsible for “the conservation of fish stocks.” In the spirit of decentralization, there is a reliance on “fishery management plans” where the exact regulations for each water body are intended to be explicated,<sup>69</sup> but there is virtually no guidance as to what should be contained in the management plan, particularly with regard to the goals of producing a sustainable yield. Perhaps achieving sustainable yields is implied in the nature of the duty of the Department of Fisheries to provide for the conservation of fish stocks, so the failure to effectively implement sustainable practices may not be attributable to this omission, but the lack of clearer guidance on this point is notable.

## **MALAWI’S FISHERIES**

### *Geography*

Large lakes, connected by an arterial waterway, dominate Malawi’s landscape. Surface freshwater covers approximately 20% of Malawi’s total area.<sup>70</sup> Its bodies of water historically

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<sup>67</sup> Government of Malawi, Fisheries Conservation and Management Act, adopted Nov. 28, 1997 [hereinafter Fisheries Act].

<sup>68</sup> Fisheries Act, §61(2)(b).

<sup>69</sup> Fisheries Act, §3(1)(f); §6(a) (allocating the task of coming up with fishery management plans to officers of the DOF and requiring Beach Village Communities to have one).

<sup>70</sup> U.N. Food and Agriculture Organization, *Aquastat: Malawi Country Report* (May, 2006), available at <http://www.fao.org/nr/water/aquastat/countries/malawi/index.stm>.

carried a rich diversity of edible fish to sustain and provide employment to the Malawian people. Four major lakes in Malawi constitute the focal points of the fishery industry; Lake Malawi (sometimes called Lake Nyasa), Lake Chiuta, Lake Chilwa, and Lake Malombe.

Lake Malawi is the largest and best known. It is the eighth largest lake in the world. While most of the lake is within the territory of Malawi, it also borders Mozambique and Tanzania. Guidebooks note that the lake is called the “Calendar Lake” because it is about 365 miles long, 52 miles wide, and it is fed by 12 rivers. More species of fish are found in this one lake than in any other freshwater body in the world.<sup>71</sup> Its total size is 29,600 square kilometers, larger than the entire state of Vermont.<sup>72</sup>

Lake Malombe is directly downriver from Lake Malawi, so close that the fish species in Lake Malombe appear to be identical to the species in Lake Malawi, indicating that the schools migrate between the lakes. Malombe is much smaller than Lake Malawi, at only about 390 square kilometers. Despite its small size, it is an active fishery, with approximately 69,000 fishing families living on the lake, organized into thirty one Beach Village Committees.<sup>73</sup>

Lake Chilwa is the second largest lake in Malawi, measuring 1750 square kilometers. Lake Chilwa is also an active fishery, contributing up to 43% of Malawi’s total fish harvest, and is an extremely productive lake in terms of fish caught per acre.<sup>74</sup> 916,447 people called the Lake Chilwa basin home in 1998, with twenty-six Beach Village Committees set up to govern

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<sup>71</sup> UNESCO World Heritage, *Site Report- Lake Malawi National Park*, available at <http://whc.unesco.org/en/list/289> (last accessed Apr. 21, 2011).

<sup>72</sup> Vermont is 23,900 square kilometers.

<sup>73</sup> George Matiya and Yoshikazu Wakabayashi, *Small Scale Fisheries of Malawi: An Outline of Lake Malombe Fisheries*, [http://www.agr.ehime-u.ac.jp/kiyou/pdf/501G\\_Matiya-Y\\_Wakabayashi.pdf](http://www.agr.ehime-u.ac.jp/kiyou/pdf/501G_Matiya-Y_Wakabayashi.pdf) (last accessed Apr. 21, 2011) (citing Fishery Department statistics).

<sup>74</sup> P.A.M. van Zwieten and F. Njaya, *Environmental variability, effort development and the regenerative capacity of the fish stocks in Lake Chilwa, Malawi*, in MANAGEMENT, CO-MANAGEMENT OR NO MANAGEMENT? MAJOR DILEMMAS IN SOUTHERN AFRICAN FRESHWATER FISHERIES, available at (<http://www.fao.org/docrep/006/y5056e/y5056e0o.htm>).

fishers on the lake.<sup>75</sup> Swamps and marshes make up two thirds of the lake's surface area, which protects breeding fish from more aggressive fishers. In 1996, Malawi ratified the Ramsar Convention on Wetland Protection, and Lake Chilwa was its designated "wetland of international importance."<sup>76</sup> This designation requires that Malawi conserve the wetland ecosystem as far as possible, and an international review on compliance with the conservation mandated in the Ramsar document is conducted annually.

Lake Chiuta is a small, isolated lake, filling only 200 square kilometers during a heavy rain season, with an exclusively artisanal fisher population of around 1,000.<sup>77</sup> It is very shallow, only thirteen or fourteen feet at its deepest, and extraordinarily clear. Some of the lake is permanently covered in vegetation that is penetrable by small canoes but not by larger craft. Like Lakes Malawi and Chilwa, it straddles the border with Mozambique, which has undermined some natural resource governance efforts. There are eleven beach villages on Lake Chiuta.<sup>78</sup>

#### *Malawi's Reliance on Fish*

Fishing makes a substantial contribution to Malawi's economy, making up four percent of Malawi's GDP in formal market trading. While there are some industrial fisheries, artisanal and subsistence fishers catch eighty-five percent of the total harvested, and small-scale fishers constitute ninety percent of the fisher population.<sup>79</sup> Some 59,500 people work directly as fishers

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<sup>75</sup> F. Njaya, *Review of Management Measures for Lake Chilwa, Malawi*, at 7 (2001) available at <http://innri.unuftp.is/proj01/FridayPRF.pdf>.

<sup>76</sup> Ramsar Convention on Wetlands, *Annotated Ramsar List of Wetlands of International Importance*, (Jan. 1, 2000) available at [http://www.ramsar.org/cda/en/ramsar-pubs-annolist-annotated-ramsar-16527/main/ramsar/1-30-168%5E16527\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-pubs-annolist-annotated-ramsar-16527/main/ramsar/1-30-168%5E16527_4000_0__).

<sup>77</sup> James Thomson, *Malawi's Lake Chiuta Fisheries: Intelligent Burden Shedding that Favors Renewable Resource Stewardship*, at 11, in CONFERENCE ON VINCENT OSTROM: THE QUEST TO UNDERSTAND HUMAN AFFAIRS (2006).

<sup>78</sup> *Id.*

<sup>79</sup> Government of Malawi, Department of Fisheries, Annual Frame Survey Report (2004).

on Malawi's lakes and rivers, and an estimated 350,000 more work in the fishing industry, building boats, repairing nets, transporting catches, etc.<sup>80</sup>

Seventy percent of Malawians rely on the fish in these waterways as their only source of animal protein, and fish forms an important source of micronutrients for the entire populace.<sup>81</sup> The staple in Malawi, *nsima*, is a pasty food made from boiled corn meal that is nutritionally very poor, serving mostly to deliver low-cost but filling carbohydrates. *Nsima* lacks essential nutrients, particularly iron, iodine, zinc, calcium, and vitamins A and B. Fish can provide all of these nutrients, thereby constituting a vital nutritional supplement to the standard fare—particularly vital in poverty-stricken Malawi, where more than half the population lives on less than one dollar a day and up to ninety percent of children are malnourished.<sup>82</sup> Additionally, fish oils supply essential acids that are particularly necessary for the development of children's minds.

For generations, a tilapia species known locally as “chambo” was the country's staple fish. The fish grows larger than most cichlids and has the rich taste for which tilapias are known. Visitors to the country were told that a meal of “chambo and chips” is the one Malawian meal one must have before leaving the country. However, as is discussed below, the heavy demand for chambo has sent its stocks plummeting in recent years, and the famous “chambo and chips” has been removed from most Malawians' diet and many restaurant menus due to skyrocketing cost.

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<sup>80</sup> Internal memo, Department of Fisheries, on file with author (2009 survey); *accord* Government of Malawi, *The Fish Sector and its Importance in Malawi*, in MEETING ON TRADE AND SUSTAINABLE APPROACHES TO FISHERIES NEGOTIATIONS UNDER WTO/EPA , 1 (2007) available at [http://www.thecommonwealth.org/shared\\_asp\\_files/GFSR.asp?NodeID=162743](http://www.thecommonwealth.org/shared_asp_files/GFSR.asp?NodeID=162743).

<sup>81</sup> B.J. MKOKO, REPORT ON THE TECHNICAL CONSULTATION BETWEEN MALAWI AND MOZAMBIQUE ON THE DEVELOPMENT AND MANAGEMENT OF THE FISHERIES OF LAKES MALAWI, MALOMBE AND CHIUTA 43 (FAO, 1992).

<sup>82</sup> Integrated Regional Information Networks, *Malawi: Malnutrition still a threat*, Dec. 20, 2007, available at <http://www.irinnews.org/Report.aspx?ReportId=75920>.

In addition to its impact on the economy and human health, fishing can be a gender-equitable enterprise, contributing to social development. Fishing in the shallows of Malawi's lakes and rivers requires only the strength to lift a line or net out of the water, which women are as able to do as men. The ability of women to provide fish for their families adds an important source of income and nutrition, but is also especially important in a country where many men go to work in urban centers, leaving their female partners with the children to fend for themselves. Even children can often contribute to the family meals by fishing on the shores with small nets. While the indiscriminate netting of fingerlings by children is a factor in the overall decline of fish landings, here it is merely worthwhile to point out the ease by which fish (and their concomitant nutrition) can be caught, making access to fish a potentially vital part in establishing food security for the Malawian poor.

Fish are also an important weapon in the ongoing struggle against the HIV pandemic in Malawi, where eleven percent of the population is currently living with HIV/AIDS.<sup>83</sup> If the primary breadwinner in the family becomes incapacitated by disease, the family must have something to fall back on to sustain them, and the ease of acquisition makes fishing an attractive option. Fish can provide both sustenance for the family's dinner table and a potential source of income to help the family afford the expensive medical care that an HIV-positive person requires.

### *Critical Decline*

Malawian fisheries were at their most productive in the mid 1980s, pulling in a total of 81,800 metric tons in 1980, but have sharply declined since, falling as low as 33,400 metric tons

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<sup>83</sup> CIA World Factbook: Malawi (2009).

total in 1995.<sup>84</sup> Data show a substantial recovery in recent years (2005-present), but that is almost entirely attributable to the fact that *usipa*, a small, minnow-like fish, began to be included in the fish stocks count, resulting in a significant increase in official reports of fish counts, while actual catches per species continue to decrease.<sup>85</sup> Even with the skewed data, commercial catches on Lake Malawi have fallen from 8,200 tons in 1987 to 3,600 tons in 2008, the most recent year that data is available. Lake Malombe went from 13,000 reported tons in 1987 to just 671 tons in 2008. In the same time period, Chilwa fell from 8,400 to 6,000 tons and Chiuta went from 3,300 to 1,018. Only the artisanal catches on Malawi have shown an increase (41,800 tons in 1987 to 56,237 in 2008), but that statistic is likely the most skewed due to the inclusion of *usipa* in recent years.<sup>86</sup>

Stories from outside the National Statistics Office indicate an even more dire state of affairs. In March of 2010, it was reported that catches from Lake Malawi dropped from an average of 30,000 metric tons in the early 1990s to just 2,000 metric tons in 2010.<sup>87</sup> The chambo, the culturally significant fish described above, has been in decline for over two decades, forcing the government of Malawi to enact a 10 Year Chambo Recovery Plan.<sup>88</sup> The drop in supply caused a sixty-fold price increase for chambo from 1989-2003.<sup>89</sup> That upward trend has continued unabated, as prices went from ~\$1.30/kg in 2005 to \$3.00/kg in 2008, increasing by

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<sup>84</sup> National Statistics Office, Fisheries Statistics CompuStat, (1988-2007), available at [http://www.countrystat.org/mwi/cont/inctables/pageid/1\\_core/m\\_fisheries/en](http://www.countrystat.org/mwi/cont/inctables/pageid/1_core/m_fisheries/en).

<sup>85</sup> Interview with Friday Njaya, Director of Planning, Department of Fisheries, in Lilongwe, Malawi (Jan. 19, 2011).

<sup>86</sup> Anecdotal evidence: When the author visited a fishing village by Lake Chiuta, there were no *usipa* on display, indicating that there was little caught there. On a visit to a Lake Malawi village, however, *usipa* was drying on racks in the thousands.

<sup>87</sup> Associated Press, *Dramatic Fish Decline in Lake Malawi Causes Alarm*, NYASA TIMES, May 27, 2010, available at <http://www.nyasatimes.com/national/dramatic-fish-decline-in-lake-malawi-causes-alarm.html>.

<sup>88</sup> Government of Malawi, 10 Year Chambo Recovery Plan (2003), available at [http://pdf.usaid.gov/pdf\\_docs/PNADM672.pdf](http://pdf.usaid.gov/pdf_docs/PNADM672.pdf). The Plan simply echoes the move to co-management over fisheries and encourages “alternative livelihood strategies” to entice fishers away from fishing. *Id.* So far, it has had little effect.

<sup>89</sup> Charles Mkoka, *Malawi drafts 10 year plan to renew Chambo fishery*, Environment News Service, June 4, 2003, available at <http://www.ens-newswire.com/ens/jun2003/2003-06-04-02.html>.

130% in three years.<sup>90</sup> The price increase has put the chambo out of the reach of most Malawians, and has prevented even high-end restaurants from being able to secure the elusive fish for their affluent diners.<sup>91</sup>

The increasing price of fish has driven down the amount of fish people eat. In 1976, the per capita consumption of fish was 12.9 kilograms per year.<sup>92</sup> In 2009, consumption had fallen to just 5.4 kilograms per year, far below the World Health Organization's recommended intake of 13-15 kg/year.<sup>93</sup> The collapse of Malawi's fisheries is leaving people bereft of a vital source of nutrition.

The chief cause of the decline can be put under the broad umbrella of overfishing; that is, taking more fish out of the lake than can be sustainably replaced. Explosive population growth in recent years has put pressure on the fisheries, where over 90% of the fishers are subsistence and artisanal.<sup>94</sup> The heavy reliance on fish (as noted above) means that as population grows exponentially, so does the demand for fish.

In order to catch more fish to meet this growing demand, fishers have experimented with smaller fishing nets. This new gear results in higher catches in the short term, but they take in juveniles ("fingerlings") along with fully grown fish, thus severely affecting the species' ability to keep populations at healthy levels. The more indiscriminate the gear, the greater its detrimental effect on the ability of the fishery to maintain sustainable fish populations.

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<sup>90</sup> Internal memo, Department of Fisheries, on file with author (2009).

<sup>91</sup> For example, the author's hotel in Lilongwe, an upscale place by Malawians standards could only find chambo on the market on a handful of occasions over the course of a month stay. The chambo is not alone in the price increase; every fish for which there are annual statistics available have registered an increase of 38% or more, catfish increasing by 163%. Internal memo, Department of Fisheries, on file with author (2009).

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> UN FOOD AND AGRICULTURE ORGANIZATION, FISHERIES DATA: REPUBLIC OF MALAWI, (Apr., 2005) available at <http://www.fao.org/fi/oldsite/FCP/en/MWI/profile.htm>.

Mosquito nets are the crudest gear being used to devastating effect in Malawi's fisheries. The holes, small enough that even tiny mosquitoes cannot get through them, catch everything in the water. They are commonly used by children fishing in the shallows of the lake, where the juvenile fingerlings of many fish species are found. A typical technique is for two kids to hold the mosquito net spread out in the water about twenty feet from the shoreline, while three or four other kids splash and swim towards the net from the shore, forcing any fish in the shallows towards the mosquito net. Almost everything caught is taken out of the lake. Mosquito nets are illegal fishing gear in all Malawian water bodies that have regulations, yet these regulations are rarely, if ever, enforced against children. However, the damage is done to the ecosystem no matter who is holding the net.

Seine nets, another type of gear used in Malawi, are common fishing equipment throughout the world, with weights attached to the bottom of the net, causing it to hang in the water that the fishers draw the net around schools of fish. While traditional seine nets had large holes that allowed juvenile fish to escape, the drop in fish catches has caused some fishers to adopt smaller-holed seine nets that catch fingerlings as well.

One particular type of seine net that has sparked controversy in Malawi is what is called the *nkatcha* net. Like all the gear discussed so far, these nets have very small holes. This net is coupled with a technique where a diver will locate a school of fish and dive under them, encircling them with the net. This has been used for decades in deep Lake Malawi and Lake Malombe without much ill-effect, as many fish will be able to swim deeper than the human diver. However, in clear, shallow settings like Lake Chiuta, this can be a devastatingly effective technique, as the fish are all easily located and harnessed. When this net was first introduced in

Lake Chiuta the fish stocks nearly collapsed, and the fishermen's demand for regulation against this dangerous net led to Malawi's first (at least initially) successful co-management system.<sup>95</sup>

*Efforts to Curb Decline: Decentralization and Co-Management*

In 1993, the government of Malawi first tried to reverse the rapid decline of fish stocks with a decentralized governance program on Lake Malombe.<sup>96</sup> Rapid population growth around Lake Malombe had increased the pressure on the lake's fish population, and the Department of Fisheries contemplated three options: a redoubled effort on its own part to enforce fishing restrictions; handing the responsibility entirely to the local populations to manage the lake's resources on their own; or to share equally the burden of managing the fishery between the central government and the local villages.<sup>97</sup> The first option was impossible due to financial and staff limitations, the second was infeasible due to the incapacity of the locals, so they settled on the third option and called together community-wide meetings to start off the decentralized governance program called "co-management."<sup>98</sup>

This policy choice for decentralization received enthusiastic support from Malawi's largest donors, where Malawi gets forty percent of its national budget.<sup>99</sup> Modern political thought links high-level authority with corruption, particularly in developing countries, so it seemed wise to avoid concentrating supreme authority in a single location or branch of government. By spreading government responsibilities down the ladder to the regional and local

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<sup>94</sup> James Thomson, *Malawi's Lake Chiuta Fisheries: Intelligent Burden Shedding that Favors Renewable Resource Stewardship*, in CONFERENCE ON VINCENT OSTROM: THE QUEST TO UNDERSTAND HUMAN AFFAIRS, 2 (2006) ("Its systematic utilization pretty much guarantees over-fishing and elimination of local fish stocks.").

<sup>96</sup> Hara Mafaniso, *Dilemmas of Democratic Decentralization in Mangochi District, Malawi: Interest and Mistrust in Fisheries Management*, WORLD RESOURCES INST., Working Paper 28, at 1 (Aug. 2007).

<sup>97</sup> Steve Donda, *Journey to sustainable fisheries management: Organizational and Institutional limitations in fisheries co-management, the case of Malombe and Chiuta in Malawi*, in MICROBEHAVIOR AND MACRORESULTS: PROCEEDINGS OF THE TENTH CONF. OF THE INT'L INST. OF FISHERIES ECON. AND TRADE PRESENTATIONS, at 153 (2000), available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.153.772&rep=rep1&type=pdf>.

<sup>98</sup> *Id.*

<sup>99</sup> Hara Mafaniso, *Dilemmas of Democratic Decentralization in Mangochi District, Malawi: Interest and Mistrust in Fisheries Management*, WORLD RESOURCES INST., Working Paper 28, at 1 (Aug. 2007).

level, it is less likely for a dictatorial central government to be able to reign tyrannically.

Additionally, in a nation that is overwhelmed with need, the central government would likely be ham-fisted in allocating aid across the country. By setting up village-level governance units, a framework is created to disperse resources to where they will be utilized most effectively.<sup>100</sup>

The decentralized control of natural resources also has support in policy literature.<sup>101</sup> A distant central environmental agency is usually less aware of the situation within the natural resource and the needs of the population it supports. The legitimacy of the central agency is greatly diminished when the central agency comes up with unrealistic or detrimental regulations.<sup>102</sup> This move towards local control theoretically makes compliance more likely, as one is more likely to abide by rules that one makes for oneself. In areas that are difficult to effectively regulate and patrol, like large scale fisheries, user buy-in is an important way to ensure compliance when external enforcement is unlikely.<sup>103</sup> Accordingly, the stated theory of the government of Malawi is that by empowering village governments to manage the natural resources they depend upon, the self-interest of the villages, with adequate education on

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<sup>100</sup> John-Mary Kauzya, *Political Decentralization in Africa: Experiences of Uganda, Rwanda, and South Africa*, U.N. PUB. ADMIN. NETWORK PUB. PAPERS (Dec. 2007) available at <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan028411.pdf>.

<sup>101</sup> See, e.g., C. Fabricius and S. Collins, *Community-based Natural Resource Management: Governing the Commons*, 9 WATER POLICY 83 (2007) available at <http://www.iwaponline.com/wp/009S2/0083/009S20083.pdf> (describing the success of community-based natural resource management from social and environmental perspectives).

<sup>102</sup> Svein Jentoft, *Fisheries Co-Management: Delegating Government Responsibility to Fishermen's Organizations*, 13 MARINE POLICY 2, 137 (1989) available at <http://www.sciencedirect.com/science/article/B6VCD-469PT6F-2N/2/4cb730d91817d7ed94e517bbfbd63826>.

<sup>103</sup> Of course, a quick objection to this plan is that turning over governance to the governed puts the fox in the henhouse. Fishermen can generally be assumed to always want to catch more fish, so to have them come up with their own limits seems to be enabling, not ensnaring unsustainable fishing practices. The theory that active participation in governance greatly improves compliance is often true, but it is contingent on the fact that one's participation is not used to limit or derail governance.

sustainability, will incentivize them to manage the natural resource responsibly, without total dependence on the central government.<sup>104</sup>

Aspects of the contemporary Malawian co-management program can trace their roots to an indigenous fisheries tradition. During the colonial era (and perhaps before), enterprising individuals would clear a lakefront beach, removing reeds, weeds, rocks and other underwater hazards so that fishermen could land their dugouts and cast their nets without impediment. Those who created these beaches charged fishers who used them a modest fee for access to the landing facility, as a pseudo-beach manager.<sup>105</sup> Thus, the modern framework builds from a previously existing governance foundation.

The current-day equivalent of the traditional beach manager within the co-management program is the Beach Village Committee (BVC).<sup>106</sup> This is the local unit that now governs a particular fishery (or area of the fishery), instead of direct regulation by the central government's fishery agency. The BVC is an elected body from the local community that has the authority of the state to create and enforce its own legally binding regulations over its jurisdiction.<sup>107</sup> These regulations principally govern who may fish in the fishery (by way of permits), what gear may be used in the fishery, and when fishing may occur (usually closing the fishery during the

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<sup>104</sup> This assumption ignores an aggregated "tragedy of the commons," where each individual village is incentivized to take on no burden to govern the resource ("free-riding"), presuming that other villages will take on the necessary burden, allowing the free-riding village to harvest more fish. See "Fisheries as Commons" section *infra* for its discussion of this issue.

<sup>105</sup> Thomson, *supra* note 94, at Box 1.

<sup>106</sup> Government of Malawi, Fisheries Conservation and Management Regulations, Part 1 (1999) (establishing Beach Village Committees as the unit responsible for "the conservation and management of fisheries resources within its area of jurisdiction").

<sup>107</sup> One crucial failure of early BVCs in Malawi was to allow the entire local village to participate in the BVC elections, leading to non-fishers serving on the Committee that governs fishers, undermining the legitimacy of the system. "In the design phase, BVC membership was targeted at fishers. However, the end composition of the BVCs was mainly dominated by non-fishers in Malombe. . . . [that] proved to have a negative impact on the performance of the BVCs." STEVEN DONDA, *Theoretical Advancement and Institutional Analysis of Fisheries Co-management in Malawi: Experiences from Lakes Malombe and Chiuta*, in INNOVATIVE FISHERIES MANAGEMENT 20 (Aalborg Univ. Press 2000).

breeding period of critical species).<sup>108</sup> The monitoring of the fishery for violations of these regulations is more or less ad hoc, and most violations are discovered while other fishermen are out and notice illegal gear in the water or see a fishing boat out during the breeding season.<sup>109</sup> As might be expected, some villages are more proactive than others in enforcing the regulations enshrined in their management plans.<sup>110</sup>

Upon discovering an alleged violation, the accused fisher is brought before the traditional authority (“T.A.,” the village chief) who metes out the punishment, typically a fine and/or confiscation of any illegal gear.<sup>111</sup> These fines are extremely low, reflecting the dire poverty of most of the fishers, where the equivalent of thirty cents is more than most can afford to lose.<sup>112</sup> However, for more economically successful fishers, the low fines may not deter violations, and instead just serve as a small tax to pay in order to continue exploiting at high rates.<sup>113</sup> Because BVC regulations carry the weight of law, this judgment is legally binding. Any money paid to the BVC is kept and ostensibly used to support its operation.<sup>114</sup>

Unfortunately, crucial weaknesses exist in a scheme that entrusts large, finite resources to small governance units, classically expressed as the tragedy of the commons. Despite its efforts, the government of Malawi has not yet managed to overcome these weaknesses, and its fisheries under community-based governance are continuing to falter.

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<sup>108</sup> Government of Malawi, Fisheries Conservation and Management Regulations, Part 1 (1999).

<sup>109</sup> Thomson, *supra* note 94, at 2.

<sup>110</sup> Donda, *supra* note 97, at 5-6 (contrasting the active enforcement and adherence of Lake Chiuta fishers against Lake Malombe’s lackluster record).

<sup>111</sup> Thomson, *supra* note 94, at 3.

<sup>112</sup> For example, the Chiuta penalties scheme calls for a 500 MK (about \$3) fine for using illegal gear, and a 200 MK fine (about \$1.50) for not registering with the local BVC. Thomson, *supra* note 94, at 16, box 5.

<sup>113</sup> The TA can (and will) assess a higher fine than the BVC plan calls for, though there is a potential justice problem where the incentives created by the fine-keeping arrangement cause a TA to fine a wealthy fisher far beyond what is necessary, simply to enrich his village BVC. See Thomson, *supra* note 94, at 22 (describing a case where a wealthy man was initially charged 15,000 MK for what normally would have been a 3,000 MK infraction).

<sup>114</sup> *Id.*, at 3.

### *Mixed Results*

Overall, co-management in Malawi has been implemented with little success. Lake Malombe has generally been regarded as a dismal failure, as the implementation of co-management on Lake Malombe does not register at all on the fish catch statistics; they show a constant decline from 1987 (13,000 tons) to 2008 (671 tons).<sup>115</sup> Since 2000, catches on Malombe have never exceeded even 1,000 tons, averaging about 600 tons per year.<sup>116</sup> The program was poorly implemented from the start. For example, as an incentive to get people to attend the initial BVC meetings, the central government paid those who attended a sum of money.<sup>117</sup> This incentivized many non-fishers to attend, despite their lack of relevant knowledge. Elections for the members of the BVCs were open to all members of the villages, regardless of their interest or experience with fishing on the lake and as a result, several non-fishers were elected to the BVCs, notably including village chiefs. Chiefs have tremendous authority in traditional villages, so their presence on the BVC effectively made equitable discussion impossible in the Committee.<sup>118</sup> The lack of fishers in the bodies that purport to govern fishers has undermined the user-buy in that the central government had hoped this new system would encourage. Partially due to the Department of Fisheries' original imposition,<sup>119</sup> and partially because of its continued heavy influence in the lake's governance, the BVCs in Lake Malombe are viewed as illegitimate entities to the fisher community (while it is viewed as

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<sup>115</sup> National Statistics Office.

<sup>116</sup> National Statistics Office.

<sup>117</sup> Thomson, *supra* note 94, at 12.

<sup>118</sup> Aaron Russell, *Chiefs Still Count: An Assessment of Fisheries Co-management Stakeholder Roles in Malawi*, Worldfish Center Publications, at 9 (2008).

<sup>119</sup> Friday Njaya, *Fisheries Governance Analysis in Malawi*, WorldFish Center Publications, at 7 (2007) (characterizing the co-management attitude as government-dominated on Malombe, as opposed to a more cooperative relationship).

part-and-parcel of the community in Chiuta) and so the rate of compliance is low, as is the number of fishers actually enforcing the regulations.<sup>120</sup>

The failure of the user groups to accept the BVCs has led to several committees fading out of existence entirely, as they cannot raise any funds. That being said, the co-management system may still be more ideally suited to Lake Malombe than larger lakes, like Lake Malawi, as it is small enough that the users still share a common culture and religion, factors that go a long way in determining the success of commons governance.<sup>121</sup> The BVCs might be reformed to reflect the fishing community, including only fishers and those in supportive roles, which would be an important step to gaining user acceptance of the regulations' legitimacy. One would think that the collapse of the fishing stocks would force the fishers on Malombe to confront their practices and accept management techniques that promise larger catches in the future. But the extreme poverty and need of the fishers means that they might be less inclined to take on additional burdens that would keep them from catching some fish immediately in the hopes of catching more fish in the future.

Lake Chiuta, on the other hand, is regarded as having successfully incorporated co-management to maintain sustainable exploitation for the lake. As opposed to Lake Malombe, where the system was imposed on the fishers, Lake Chiuta fishers actively sought the ability to self-govern, after foreign fishers threatened to overwhelm the fishery. Their imposition can be traced back to 1985, when the first road was built to Lake Chiuta, increasing ease of access to the fishery.<sup>122</sup> Fishers from Lake Chilwa soon invaded the area, sporting the small-mesh *nkacha*

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<sup>120</sup> Donda, *supra* note 97, at 5.

<sup>121</sup> Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 Duke L.J. 1, 32 (1991) (arguing that "moral suasion" is necessary to get communities to internalize resource management provisions).

<sup>122</sup> Tony Seymour, *Decentralisation and Fisheries*, USAID Malawi, Occasional Paper No. 4, at 5 (Mar. 2005).

nets described above. The widespread use quickly had a noticeable impact on the resident fishers' catches, and in 1992, the Chiuta fishers came together to coerce the migrant fishers to adopt larger mesh nets or leave the area.<sup>123</sup> Instead of complying with this grassroots governance, the migrant fishers bribed the traditional authorities (chiefs) to allow them to continue using the *nkacha* nets.<sup>124</sup> Disillusioned by their chiefs' abilities to protect their interests, the Chiuta fishers then approached the Department of Fisheries on their own to create user-generated and publicly-enforced local fishery management committees, like the ones they heard about on Lake Malombe. Importantly, they excluded the now-distrusted traditional authorities from participating in the governance groups.<sup>125</sup> In 1995, once the village-level committees were established, they came together to form the Lake Chiuta Fisheries Association, a lake-wide governance group, and enforced the ban on *nkacha* nets by burning down the homes of the Chilwa fishers who refused to comply.<sup>126</sup> As that may indicate, the fishers on Lake Chiuta are willing to risk personal bodily harm to enforce the lake's regulations.<sup>127</sup>

Despite its occasional brutality, Lake Chiuta has been praised by those who studied it as a model for co-management.<sup>128</sup> The regulations that the Lake Chiuta BVCs have come up with primarily operate to exclude illegal gear, specify minimum net size, and require registration of

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<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> F.J. Njaya, et al., *Fisheries Co-Management in Malawi: Lake Chiuta Re-Visit Case Study*, International Collective in Support of Fishworkers, at 7 (2006), available at <http://www.icsf.net/icsf2006/uploads/resources/bibliography/docs/english/%3C1142330285551%3Echiuta%20co-management.pdf>.

<sup>126</sup> Seymour, *supra* note 119, at 5.

<sup>127</sup> Thomson, *supra* note 94, at 16 ("Fishers in Chiuta VBCs, moreover, demonstrate a commitment to enforcement, exemplified by a willingness to take physical risks in confiscating illegal gear, against which the relative inertness of Lake Malombe VBCs pales by comparison").

<sup>128</sup> See, e.g., F. Njaya et. al. *Fisheries Co-Management in Malawi: Lake Chiuta Re-Visit Case Study*, Thomson, *supra* note 94, Donda, *supra* note 97.

new fishers.<sup>129</sup> Analysts ascribe the success of Lake Chiuta to the fact that it was wholly self-organized, and the regulations have been internalized and well-enforced by the local fishers.<sup>130</sup>

The effectiveness of its self governance may be explained by the small size of Lake Chiuta (200 square kilometers). The fishers there are a unified, close-knit community, and social stigmas may be associated with the violation of the community's standards, as reflected in the lake's regulations.<sup>131</sup> Furthermore, the lake is far from major urban centers, which prevents pressure to produce more fish for market.

All is not rosy on Lake Chiuta, however. In the last few seasons, catch counts have been down significantly. Historically, Lake Chiuta's yearly total catches have been over 2,000 metric tons, but they shrunk down to just 791 tons in 2004, recovering slightly to 1,018 tons in 2008. A potential explanation for this lies in the fact that 20% of Lake Chiuta is in Mozambique, and Mozambican fishers are not subject to Malawian laws or the regulations of the BVCs. If Mozambican fishers continue to overfish, free riding on the Malawian efforts to ensure a healthy fish stock, the self-organized burden-sharing characterizing the Chiuta BVCs may have come to naught.

Lakes Malawi and Chilwa have some limited indications of success with co-management, but their catch rates continue to decline.<sup>132</sup> Lake Chilwa is a highly variable water body, prone to drying up during dry seasons, even completely disappearing in 1995, dropping the total catch

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<sup>129</sup>Example regulations: "OR1: prohibition of four kinds of nets: (a) khoka la nkacha (open water seine net); (b) khoka la pansa (beach seine nets) [fine for use: 15,000-30,000 MK, net to be returned once fine paid]; (c) mosquito nets, use of which is prohibited in both the lake itself and all its tributary rivers [infractions sanctioned by MK600 fine]; and (d) mkwakwaza (scoop nets), use of which is again prohibited in both the lake itself and all its tributary rivers [infractions sanctioned by fine of MK500]." Thomson, *supra* note 94, at Box 5, quoting Chiuta Fisheries Operational Rules.

<sup>130</sup> See, e.g., Thomson, *supra* note 94, at 16, Donda, *supra* note 97, at 5.

<sup>131</sup> Thomson, *supra* note 94, at 16.

<sup>132</sup> National Statistics Office, Malawi (see "Decline" section above).

to just 1,300 tons, down from over 10,000 tons the year before.<sup>133</sup> Therefore it is difficult to track the success of governance programs through fish stock statistics alone on Lake Chilwa, as the volatility in water levels will render the statistics a poor reflection of fish exploitation, instead possibly reflecting simply the depth of water in recent seasons as the fish stocks can take up to three years to recover after a severe dry spell.<sup>134</sup>

However, anecdotal evidence indicates that the BVCs in the Chilwa area are relatively strong. Twenty-six BVCs have been established on the lake, and the Department of Forestry has two suboffices on the lake. Extension workers also live in the communities, where they are available to the BVC and the fishing community at all times.<sup>135</sup> User-initiated enforcement actions are ongoing, and this author was present when a seine net was confiscated and brought into the District Fishery Officer's compound for fishing during the closed season.

The area BVCs have formed three region-wide fishery associations, which have together purchased a boat for the exclusive purpose of monitoring the lake from their taking of permit fees and enforcement penalties.<sup>136</sup> These associations have weaknesses, as they are dominated by traditional authorities with little understanding of the fisheries, but they are recognized as the legitimate governing bodies of the lake, and recently a group of fishers collectively bargained with the associations to shrink the closed fishing season from six months to three.<sup>137</sup> Assuming that this is not a fatal blow to the breeding abilities of the fish populations, this is a positive sign of successful deliberation rather than outright rejection.

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<sup>133</sup> National Statistics Office.

<sup>134</sup> F. Njaya, *Review of Management Measures for Lake Chilwa, Malawi*, at 7 (2001) available at <http://innri.unuftp.is/proj01/FridayPRF.pdf>.

<sup>135</sup> Interview with Zomba District Fishery Officer in Zomba, Malawi (Jan. 21, 2011).

<sup>136</sup> *Id.* Unfortunately, the boat does not have an engine yet.

<sup>137</sup> Seymour, *supra* note 119, at 6.

Despite progress, several challenges remain. The fishing community is transient around Chilwa, either because their primary occupation is in agriculture and so are not constantly involved with lake-based issues, or because they move from fishery to fishery throughout the seasons. This transience makes sensitizing the fishers to sustainable practices extraordinarily difficult for the Fisheries Officers, who will start to build a knowledge base with a group, then have them move on and have to start all over again with a new group of migrant fishers.<sup>138</sup>

Relatedly, the compliance rates on Chilwa are low. Out of 10,000 people, the Department of Fisheries officer estimated that only 2,000 would comply completely with the lake's regulations.<sup>139</sup> This reflects the fact that fishers have not internalized the BVC regulations, and beyond the lake's variable water levels, one may explain the decreasing fish counts (15,000 tons in 2000 to 6,000 tons in 2008)<sup>140</sup> by continued overfishing. However, as the fishery associations grow in competence and budget, there is optimism that enforcement will be a more viable threat, better deterring non-compliant fishers and making a strong case for co-management on even a sizable lake.

The size of Lake Malawi, however, may be beyond the ability of local governments to govern. There are hundreds of BVCs scattered along on the shores of Lake Malawi, and assessing them is a difficult task given the size and scope of the lake and the BVC governance areas.<sup>141</sup> One place where community management has worked extraordinarily well (and has been the subject of published studies) is Mbenji Island, situated just over nine miles from the lake shore in the Salima District. Mbenji Island has had a traditional fishery governance system in place for at least forty years, long before the central government adopted it as its preferred

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<sup>138</sup> Interview with Zomba District Fishery Officer in Zomba, Malawi (Jan. 21, 2011).

<sup>139</sup> *Id.*

<sup>140</sup> National Statistics Office.

<sup>141</sup> Seymour, *supra* note 119, at 7.

policy.<sup>142</sup> A forward-thinking traditional authority created a closed fishing season within the TA's area of control that lasts from December to April, and that has been aggressively enforced since the 1950s.<sup>143</sup> The fishing restrictions on gear have been well-enforced by the community, bringing anyone caught fishing in the area during the closed season before the traditional authority for judgment. This has resulted in an area of Lake Malawi where fish stocks have not declined, but have remained stable.<sup>144</sup>

Notice that, like the BVCs in Lake Chiuta, this was a successful program that originated with the people themselves. The support that the central government has lent, most particularly the grant of legal authority to back up the traditional authority's regulations and punishments, has certainly strengthened the system. But the legitimacy of the system stems from the fact that it was user-generated, not imposed by the central government and the Department of Fisheries.

Current data are unavailable for most discrete areas of Lake Malawi's fisheries. One large fishing village, Nkhotakota,<sup>145</sup> has several BVCs around it, and a regional association to coordinate the BVCs, but it suffers from a perpetual lack of resources to even afford flashlights or fuel to transport members to meetings.<sup>146</sup> While the momentum for a vibrant local governance system fades, fish landings for important species like the chambo and utaka continue to decline in the lake.<sup>147</sup> It seems that the lake is simply too large to be effectively monitored by village-level governments. The disparate levels of enforcement from fishery to fishery causes externality problems, where the burden taken on by one BVC is not matched by another BVC, who chooses instead to free-ride on the sacrifices made by others to catch more fish in the short

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<sup>142</sup> USAID, *Examples of CBNRM Best-Practices in Malawi*, at 11 (2002) available at [http://pdf.usaid.gov/pdf\\_docs/PNADB179.pdf](http://pdf.usaid.gov/pdf_docs/PNADB179.pdf).

<sup>143</sup> *Id.* It is unclear how the jurisdiction of the island chief is delimited and how far it extends.

<sup>144</sup> *Id.*

<sup>145</sup> Interview with Friday Njaya, Director of Planning, Department of Fisheries, in Lilongwe, Malawi (Jan. 19, 2011).

<sup>146</sup> Seymour, *supra* note 119, at 7.

<sup>147</sup> *Id.*

term. The size of the lake also makes it easy for fishers to evade the notice of other fishers. Small, hand-dug canoes comprise the bulk of the fleet of fishing vessels, making pursuit and capture of violators by hand-paddling fisher-enforcers extremely difficult, if not impossible.

### *Fisheries as Commons*

The same weaknesses that plagued the pre-devolution regime, like poor monitoring and enforcement ability and fisher non-compliance, are still present across Malawi's fisheries. Fish counts continue to fall across the board, even in the heralded Lake Chiuta, where it seems like many factors for a successful community-based natural management system are present. Perhaps it is a failure of implementation, but it seems that there are inherent weaknesses in the co-management framework. Local-level governments always have a problem with effecting change on a source that is larger than its jurisdiction. So long as there is a malfeasant village on the lake, there will always be access for unsustainable fishing practices. A regional government that can encompass a larger area, as seen on Lake Chilwa, will always be necessary, but the legal framework is unsupportive of this type of arrangement. It envisions a strong central-local paradigm, without much room for a regional collective of local governments (though some have arisen anyway).

Lake Malawi presents the largest objection to community-based governance, as its massive size puts it beyond the jurisdiction of most conceivable governments below that of the national. It may be theoretically possible for the BVCs on Lake Malawi to operate collectively to coordinate their enforcement activities and permitting systems (and the Department of Fisheries is tasked with ensuring a degree of uniformity in the science used and the regulations set forth governing each fishery), but the lack of infrastructure in Malawi alone creates so many

transaction costs that at this point in time, sub-national coordination without more assistance from the central government itself seems infeasible.

Fisheries are the prototypical example of a “commons” problem, where individual incentives cause a tragedy; every person overexploits the resources because they do not want to voluntarily take on a conservationist burden, forgoing a large catch, when their competitors will take up whatever surplus is created.<sup>148</sup>

The original solution to the commons problem, as outlined by Garrett Hardin in the seminal piece on this subject, is “mutual coercion, mutually agreed upon;” that is, a government by consensus.<sup>149</sup> With its co-management policy, Malawi is trying to create exactly that, fishery governments that are mutually agreed upon. The government support aims to bring to negotiation costs down by actively encouraging fishers to get together to discuss mutual governance, and it hopes to provide the requisite education so they can come to an effective solution. Negotiation costs remain, however, as individual hold-outs will continue exploiting the fishery until something convinces them to do otherwise; on Malombe, it was seen that fishers have rejected the BVCs because the committees do not reflect their population or wishes, preventing the mutual agreement that Hardin suggests is required. On Lake Chiuta, however, mutual agreement was reached in recognizing the need to repulse an invasion of aggressive fishers from outside the Chiuta region. Elinor Ostrom’s work on commons governance, which limited itself to resource groups no larger than 15,000, suggests that community management can successfully escape the tragedy of the commons if eight principles are met: First, jurisdictional borders are clearly demarked to show who is responsible for what part of the resource; second,

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<sup>148</sup> Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 Duke L.J. 1, 3 (1991) (“The moderate fisher, in short, would just be a sucker; she would lose out while all her rivals would take what she gave up.”).

<sup>149</sup> Garrett Hardin, *The Tragedy of the Commons*, 162 Science 1243, 1247 (1968).

the regulations imposed reflect local conditions and would adequately conserve the resource; third, all affected individuals have a chance to participate in the governance; fourth, monitoring for violations takes place across the board; fifth, sanctions should be graduated to reflect the severity of the violation; seventh, users can organize their own institutions, and finally, the hierarchy of the arrangement within a larger political system is clear.<sup>150</sup>

Malawi's co-management system meets most of these factors, but the fisheries continue to decline. This is not to say that Ostrom's model is wrong, Malawi may simply not have met all of the necessary requirements for a successful communal management program. For instance, the ability for "all affected individuals" to participate was hampered in Lake Malombe. The Traditional Authority's influences, for good or ill, cannot be ignored in any village implementing the scheme, as they pose a threat to the ability of BVCs to be truly user-driven.<sup>151</sup> Ostrom's fourth factor requiring monitoring is also a variable in Malawi. Not only is there a lack of tools (boats, radar, etc.) for BVCs to effectively monitor their area, but the incentive to free-ride by individual villages is ever-present.<sup>152</sup> Finally, the fact that sanctions are very low means that some well-off fishers (perhaps made better off by their free-riding) will continue to overexploit and pay the fine as a cost of doing business.<sup>153</sup>

Even if all of Ostrom's factors were met there is still the problem of scale, especially on the most important of Malawi's fisheries, the eponymous Lake Malawi. Ostrom's models were based on small-scale community pools, numbering no more than 15,000 users. Lake Malawi

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<sup>150</sup> ELINOR OSTROM, GOVERNING THE COMMONS 18-21 (1990).

<sup>151</sup> See Aaron Russell, *Chiefs Still Count: An Assessment of Fisheries Co-management Stakeholder Roles in Malawi*, (Jun. 2008) (unpublished draft) available at [http://www.frameweb.org/adl/en-US/3556/file/435/Russell%20and%20Dobson%20\(2008\)%20%20-%20Chiefs%20still%20count%20-%20full%20article%20submitted%20\(Jun26,%202008\).pdf](http://www.frameweb.org/adl/en-US/3556/file/435/Russell%20and%20Dobson%20(2008)%20%20-%20Chiefs%20still%20count%20-%20full%20article%20submitted%20(Jun26,%202008).pdf).

<sup>152</sup> See Thomson, *supra* note 94, at 25-32 (charting enforcement actions of each Chiuta BVCs, showing some to be active, with many seizures and judgments, and others inactive, with just one or no enforcement actions).

<sup>153</sup> See *id.*, at 25-32 (finding one individual fined several times in the enforcement records, indicating that he finds the profit from defecting higher than its cost).

has approximately 48,000 people directly employed as fishers on the lake, with thousands more working as net-makers, boat repairers and other supportive roles.<sup>154</sup> The greater the number of individuals involved, the greater the complexity in arranging an effective mutually agreed-upon governance system.<sup>155</sup> If it were possible to cordon off sections of the lake into smaller partitions, giving each village the responsibility for one isolated body of water, it would be a far simpler system; this would ensure that those conservation-minded BVCs who limit their catches would reasonably expect higher harvests in the future that free-riding neighbors could not siphon off. Sustainable regulations would be adopted and internalized across the board once the benefits of sustainability are recognized. But lakes are fluid, and fish conserved in one jurisdiction can swim to another and still get picked off by a free-rider.

Because of these challenges, it seems untenable to hold that the current approach to co-management in Malawi should remain as a nation-wide policy. The central government must realize that village-level governments are not able to effectively govern large fisheries effectively. If there is a demand for fish that is not being met, overexploitation will continue, until there are adequate enforcement mechanisms in place from formal government structures or from social pressure.

Instead of giving up control to the local governments at a scale smaller than the water body it governs, the central government could create a lake-wide governing body that collects all the relevant actors under its umbrella, like a Lake Malawi Commission.<sup>156</sup> It must enforce a

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<sup>154</sup> Internal memo, Department of Fisheries, on file with author (2009).

<sup>155</sup> Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 Duke L.J. 1, 4 (1991) (“If the numbers of fisherfolk are too large or heterogeneous, [overcoming collective bargaining problems to create effective local governance] becomes much less likely.”).

<sup>156</sup> See the Chesapeake Bay Commission (CBC), <http://www.chesbay.state.va.us/> (last visited Apr. 28, 2011) for an analogous body. The CBC is a quasi-legislative body set up to govern the Chesapeake Bay back to health, made up of representatives from Maryland, Virginia and Pennsylvania. *Id.* Problematically, so far it has failed to make noticeable difference in the Bay’s health. See Chesapeake Bay Program, *Bay Barometer* (2009), <http://www.chesapeakebay.net/indicators.htm> (last visited Apr. 29, 2011).

permitting scheme, so that access is no longer open to all comers.<sup>157</sup> It may grade the price of the permit against the size of the permitted catch, so that subsistence farmers may still catch enough fish to survive without being priced out.<sup>158</sup> Conditions on the permit would include those already mentioned as necessary in Malawi, including an enforced closed season for fish to breed, a minimum net size and ban on certain fishing gear. But, importantly, the entire lake would be under the auspices of a single governing entity, ensuring that there is no “leakage” caused by gaps in regulation or enforcement.<sup>159</sup> A single body would be able to collect fees from the entire lake in one place, instead of dispersing small amounts across a number of smaller units where the money is not able to do as much. The lake cooperative would also be able to purchase monitoring tools and coordinate patrols to ensure that fishers comply with its regulations from shore to shore. The current “regional” aspect to the Malawian system is a delegation of authority to District Assemblies, but lakes stretch beyond the jurisdiction of single Assemblies— Lake Chilwa, for example, is under three Districts, so the oversight that may come from these Assemblies (which lack fishery competence anyway) is trifurcated.

Of course, this would not be easy to set up successfully. Lessons from Lake Malombe show that the fishers must view the Commission as competent and legitimate or compliance rates will remain low (though better enforcement could change that). More problematically, Lakes Malawi, Chilwa, and Chiuta all sit astride the border with Mozambique, making a government-

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<sup>157</sup> Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 18-9 (1991) (describing the problem of open access and the importance of enforcing a closed system). The constant increase in the number of fishers is cited by fishers themselves as the primary reason for the decline in fish catches, but they acknowledge that one can’t “tell a poor man that has no other livelihood but fishing that he has to stop.” Seymour, *supra* note 119, at 27.

<sup>158</sup> The British government successfully dealt with the open access to fisheries by giving out no-cost permits to every fisher in 1983, then cutting off permits for every year after that. Those permits in the system quickly acquired a cash value, and the government would occasionally buy permits off the market at the going rate, thinning the number of fishers on the fishery. No one was forced to leave, and those who did leave were given a cash payment. Seymour, *supra* note 119, at 28.

<sup>159</sup> See generally, Mustafa H. Babiker, *Climate Change Policy, Market Structure, and Carbon Leakage*, 65 J. INT’L ECON. 421 (2005) (describing “leakage” in environmental law as gaps in regulation, and the process by which under-regulated areas are economically benefited, undermining comprehensive environmental efforts).

driven initiative difficult to set up for the entire water body. The up-front negotiation cost reduction by having the national government implement the program is somewhat lost when the collective must coordinate with parties outside the national government's own jurisdiction. In addition, the massive scale of Lake Malawi would still cause coordination problems for that body. The lack of developed infrastructure would interfere with a single unit's ability to coordinate actions over such large distances. Having said that, a regional, lake-specific scheme's advantage over the village model is that there is a governance body large enough to cover the entire lake to prevent inter-unit free-riding, and under the Matching Principle, a lake-sized government would be the appropriate body to counter the lake-wide overfishing problem.<sup>160</sup>

## CONCLUSION

The government of Malawi bears a significant legal burden to provide its citizens with a sustainable natural resource governance system, imposed by its own signatures on dozens of international treaties and declarations, as well as the obligations attendant on all sovereign nations under customary international law. Currently, those obligations have not been fulfilled. The co-management system that began in the mid-1990s and has been implemented on every major fishery in Malawi is not having the desired effect of salvaging the decimated fish stocks. This has impacts for the health of the aquatic ecosystems, but also on health of Malawi's human population. The high population growth, currently at 2.8%,<sup>161</sup> is putting more and more pressure on fisheries that are already overexploited, and Malawians cannot afford the recommended minimum amount of fish that the World Health Organization believes is necessary for adequate

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<sup>160</sup> Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL'Y REV. 23, 25 (1996) (“[T]he size of the geographic area affected . . . should determine the appropriate governmental level for responding.”).

<sup>161</sup> World Bank, *World Development Indicators— Malawi* (2009), available at <http://data.worldbank.org/country/malawi>.

nutrition.<sup>162</sup> The Malawian government should take steps to scale back the co-management system and implement lake-wide governance bodies to ensure that there is no leakage in management and enforcement of regulations, while educating the fishing communities to understand the importance of sustainable harvesting.

Supplementing the open-water capture fisheries with private sources of fish is vital to ensure that at least some of the population has an adequate supply of nutrition. The National Aquaculture Centre, an aquaculture initiative joint venture from a non-profit and the government, is reportedly capable of generating one million baby chambo fish per month.<sup>163</sup> Maldeco, a private caged aquaculture company on Lake Malawi, is the only stable source of chambo in the markets of Lilongwe and Blantyre, though its produce is more expensive than most Malawians can afford.<sup>164</sup> The government of Malawi is also encouraging the use of small-scale private fishponds by rural citizens, which would take the fish source out of a commons government system to private ownership, removing the incentives to overfish.<sup>165</sup> Of course, building a successful fish pond requires the beneficiary to own the land or have secure tenure, which is difficult to achieve in Malawi where title to land is rarely documented,<sup>166</sup> and it requires substantial technical assistance, is sensitive to environmental changes, and takes away land that

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<sup>162</sup> Internal memo, Department of Fisheries, on file with author.

<sup>163</sup> *Id.*

<sup>164</sup> Interview with Jensen Phiri, restaurant staff, in Lilongwe, Malawi (Jan. 14, 2011).

<sup>165</sup> Government of Malawi, 10 Year Chambo Recovery Plan (2003).

<sup>166</sup> See generally Naomi Ngwira, *Women's Property and Inheritance Rights and the Land Reform Process in Malawi*, INST. FOR POL'Y RES. & ANALYSIS FOR DIALOGUE PUBLICATIONS, (2008), available at [http://www.sarpn.org.za/documents/d0000585/P522\\_Malawi\\_property\\_rights.pdf](http://www.sarpn.org.za/documents/d0000585/P522_Malawi_property_rights.pdf) (describing the current push for land title surveys, the historic practice of leaving land untitled in community hands and the prospect for gender discrimination in the reform process).

would be used for subsistence crops. But it would provide hope for the poor of Malawi to secure a sustainable supply of fish.<sup>167</sup>

The growing environmental challenges that Malawi faces, even beyond the collapse of its fish resources—rampant deforestation, silted waterways, increased industrial pollution and a lack of clean fresh water— requires a re-examination of Malawi’s implementation of sustainable development principles to ensure that its people can climb out of their dire poverty, to fulfill its legal obligations and conserve its vital natural resources for future generations.

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<sup>167</sup> See ASIAN DEVELOPMENT BANK, AN EVALUATION OF SMALL-SCALE FRESHWATER RURAL AQUACULTURE DEVELOPMENT FOR POVERTY REDUCTION, (Apr., 2005) *available at* <http://www.adb.org/Documents/Books/Freshwater-Poverty-Reduction/Fresh-Water.pdf> (evaluating eight case studies of rural fish pond projects).