



Responsible Investment in the 21st Century

In this issue, we are thrilled to introduce *The 2050 Criteria: Guide to Responsible Investment in Agricultural, Forest, and Seafood Commodities*. Launched at the Global AgInvesting Conference 2012 in Singapore, WWF's *2050 Criteria* has garnered acclaim from dozens of media outlets around the world, from Egypt to China, including outlets such as [Thompson-Reuters](#), [Business Green](#), [Environmental Finance](#), and [Responsible Investor](#).

Developed over the past two years, *The 2050 Criteria* aggregates the collective insights of WWF's 50+ commodities experts, who work across more than 100 country offices and engage with more than 60 leading global consumer goods companies, food and agriculture businesses, and financial institutions. *The 2050 Criteria* provides distilled, mainstream guidance for investing in 10 global soft commodity sectors, including Key Performance Criteria for identifying responsible companies and projects.

We also take this opportunity to highlight a sector of mounting interest to many investors: aquaculture. Seafood farming is the world's fastest growing food production system. Yet the sector is often perceived as risky

and complex by many financiers. The recent emergence of the Aquaculture Stewardship Council (ASC)—with certifications underway in tilapia and pangasius (also known as Asian Catfish), including aggressive growth targets by many companies and even national governments—may pave the way for new investments opportunities tied to responsible mainstream production. In this edition, we interview WWF's leading aquaculture expert, José Villalón, on emerging investment opportunities. We simultaneously profile tools from *The 2050 Criteria* that can help manage business and reputational risks while financing this sector.

International Finance

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WWF releases groundbreaking guide to commodities investing

The 21st century has presented humanity with the ominous reality that, by 2050, we may face widespread insufficiency of food, fiber, and bioenergy to meet our needs. A rapidly growing global population, accelerating consumption, dietary shifts, climate change and other factors are driving unprecedented price volatility, resource shortages, and other risks in soft commodity supply chains.

Combining science with leading industry and finance practices, [*The 2050 Criteria: Guide to Responsible Investment in Agricultural, Forest, and Seafood Commodities*](#) serves as a field guide for investors to identify responsible companies and projects in the agricultural, forest and seafood industries.

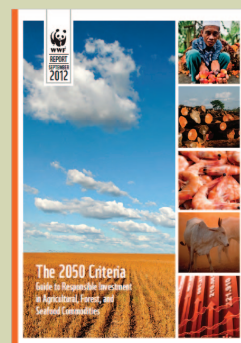
The 2050 Criteria provides a framework to identify responsible practices in 10 soft commodity sectors around the globe, including:

- Aquaculture
- Beef
- Cotton
- Dairy
- Palm Oil
- Soy
- Sugar
- Timber, Pulp, & Paper
- Wild-caught Seafood
- Bioenergy

These commodity supply chains play key roles in meeting humanity's growing demands while simultaneously generating some of the largest and most irreversible impacts on communities and ecosystems globally.

Food security, and its attendant social, environmental, and economic consequences, is the challenge of the 21st century. If finance, industry, and civil society can work together toward sustainable production of these key commodities, we can help ensure that Earth meets humanity's current demand without compromising the prospects for human development and functioning markets in the coming decades.

THE 2050 CRITERIA



Interest and investments in soft commodities is increasing. Yet simultaneously, the financial world is beginning to realize the depth of environmental and social risks contained in these assets. *The 2050 Criteria* seeks to untangle this complexity. The document provides distilled, mainstream guidance for investors to access soft commodities sectors in a responsible manner.

For each soft commodity sector, *The 2050 Criteria* outlines:

- Structures of the global market, including data and dynamics
- Primary environmental and social risks
- Key Performance Criteria for managing environmental and social risks
- Leading third-party certifications
- Major trends and opportunities
- Links for additional tools and resources

Learn more about how *The 2050 Criteria* can help you manage critical business and reputational risks, reduce transaction costs, and contribute to improved risk adjusted returns. [Download](#) a copy today.

The Rise of Aquaculture and the Mainstreaming of Sustainable Practices

WWF's leading aquaculture expert, José Villalón shares insights into the emerging investment opportunities in responsibly farmed seafood with the recent availability of Aquaculture Stewardship Council (ASC) certified tilapia and pangasius in the market.

What does the availability of Aquaculture Stewardship Council (ASC) certified farmed seafood in the marketplace mean for the industry?

The recent launch of ASC-certified, farmed tilapia and pangasius represents a turning point for the aquaculture industry, ushering in a new era of environmentally and socially responsible farmed seafood. Combining the insights and inputs of over 2,000 seafood farmers, retailers, NGOs, scientists and other important industry stakeholders, the standards for ten aquaculture commodity products such as shrimp, salmon, tilapia, pangasius, trout, oysters, mussels, clams, scallops and abalone will help ensure that the growth of the aquaculture industry is sustainable.

The market for ASC-certified farmed seafood is growing rapidly, as major export countries strive to gain a market advantage. In the case of farmed pangasius, the Vietnamese government and aquaculture industry has thrown their full support behind certification, pledging to pursue ASC certification for 50% of the country's pangasius exports by 2015. This is the first time a producing nation has made such a public commitment to a voluntary environmental standard. Key consuming countries are also supportive. In the Netherlands, for example, the Dutch Food Retailer Association has committed that by 2015, 100% of farmed seafood imported into the country would be ASC-certified.

What value does the ASC certification provide to investors?

The ASC standards help manage the risk of investments in the aquaculture sector by measurably reducing key environmental and social impacts through performance-based indicators. By mandating efficient use of resources, operational costs on farms will be reduced (e.g., reducing the amount of fish meal in dietary protein feed ingredients will ultimately result in reduced feed costs, which represents one of the highest cost centers in production). By addressing water quality and excess nutrients which lead to pollution, the risk of disease is significantly reduced and viability of the farmed species increased. ASC certification not only addresses environmental impacts, but also supports more efficient practices and reduced costs, leading to a better business model for the aquaculture industry.

What are the financial barriers, if any, to the growth of credibly certified aquaculture?

As with most new schemes and programs, there are initial "start-up" costs or capital investments that some farms will incur. In Vietnam, some pangasius farms may need to install sedimentation ponds to collect sludge before effluents are released into the Mekong River as drain water. For shrimp farms, there is a one-time only Biodiversity Environmental Impact Assessments that will be required to ensure protection of biodiversity in their area of operations. Salmon farmers will need to perform costly benthic impact assessments in the area under their production cages, to ensure the flora and fauna on the ocean bottom is not negatively impacted. In the beginning, some of these costs—paid to various service providers—will be relatively high. As the systems become more mainstream, costs will decrease.

What are the key environmental risks that financial institutions should be mindful of when investing in aquaculture?

Primary environmental risks in aquaculture production can include conversion of sensitive areas such as mangroves, nutrient loading of local waterways, unsustainable feed inputs, and changes to the local gene pool with resulting biodiversity loss. The following page demonstrates these risks, with a graphic pulled directly from the Aquaculture chapter of *The 2050 Criteria*. On the left, the table identifies the primary environmental and social risks that face industry operators and their investors in this sector. On the right, there is identification of Key Performance Criteria for identifying responsible practices to effectively mitigate and manage these risks.



José Villalón, WWF's Vice President of Aquaculture, shares insights on the future of responsibly farmed seafood in this [video](#).

Next Edition

We will illuminate "Africa Madness": why investors in new African palm oil developments may expect major losses. Seasonal rainfall patterns and other factors will precipitate underutilization of mills and erode margins.

AQUACULTURE

ENVIRONMENTAL & SOCIAL RISKS



SHRIMP



SALMON

Nutrient & Waste Loading in Water

Excess food and waste can increase levels of nutrients in the surrounding water, leading to the growth of excess algae, which consumes oxygen needed by other plant and animal life.

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Fish/Shrimp Feed

If derived from unsustainable sources, fish feed (e.g., fishmeal, fish oil, and soy protein) can contribute to overfishing, the depletion of wild fish populations, and/or to land conversion in terrestrial ecosystems.

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Habitat Loss

Coastal wetlands and mangroves can be destroyed for placement of new aquaculture sites, impacting critical breeding and nesting grounds for other species.

Not applicable



Excessive Chemical & Antibiotic Use

Excessive use of antibiotics, antifoulants, and pesticides, or the use of banned and toxic chemicals, can cause negative consequences for marine organisms and human health, including human pathogen evolution and antibody immunity.

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Water Use

Poor management of water resources, including lack of coordination between operators in a common area, can lead to depletion of aquifers and salinization and contamination of ground water and farmland, impacting local communities and livelihoods.

Not applicable



Escaped Fish

Not applicable

Escaped farmed salmon can compete with wild fish and interbreed with local wild stocks of the same species, altering the local genetic pool.



Disease Introduction & Transfer

Viruses and pathogens can transfer between farmed and wild shrimp, as well as between farms, and can lead to major outbreaks. Pathogens can be introduced via aquaculture if bio-security is not well managed.

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Poor Working Conditions

There can be poor living and working conditions for employees, particularly in processing plants, including lack of fair wages, gender discrimination, child labor, limited access to health care and education, and insufficient or absent health and safety procedures.

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Conflicts Over Shared Commons

Conflicts can arise among users of the shared coastal environment.

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Wild Brood & Seed

Collection of wild brood and seed (post larvae) can cause biodiversity loss.

Not applicable



Ecosystem Services

Loss of water availability and other ecosystem services can occur for surrounding communities.

Not applicable



CATEGORIES OF IMPACT

- Biodiversity Loss & Conversion
- Climate Change & Air Quality
- Soil Erosion / Degradation
- Water Use
- Pesticides & Toxicity
- Nutrient Loading & Eutrophication
- Disease & Animal Care
- Labor
- Local & Indigenous Communities
- Society & Consumers

KEY PERFORMANCE CRITERIA

Ecosystem Functions

The farms have been sited in environmentally suitable locations while conserving local biodiversity, natural habitat and ecosystem function. The producer has protocols in place to ensure limited escapes.



Water Management

A complete assessment of fresh water resource requirements and discharge impacts should be conducted, taking into consideration production needs, hydrological conditions, downstream human and environmental needs and uses, and impacts that the water use and discharge will have on the watershed, community health, and regional ecology. This is especially important in water stressed areas. A Water Management Plan is in place that addresses relevant risks and includes concrete measures to protect ground water or local water bodies. (Appropriate systems for management may vary across aquaculture species and techniques.)



Sustainable Feed

The producer ensures the traceability and sustainability of the ingredients used for fish feed; in particular that fishmeal and fish oil is coming from responsible fisheries, but also that the production of soy and other vegetable ingredients did not result in land conversion.



Legal Production

The product is produced/harvested and traded in compliance with all applicable local, national and ratified international laws and regulations. The producer holds legal rights to conduct activities on the area of land, water, or coastal environment.



Chemical Use

Antibiotics and other therapeutants, pesticides, and parasitcides are used properly on site, judiciously and in a targeted fashion, using available expertise. Where possible, antibiotics should be used under protocols established in consultation with a trained and accredited professional. There is no use of antibiotics that are critical for human health according to the list contained in the World Health Organization's 'Critically Important Antimicrobials for Human Medicine.' Treatments are prepared and applied by trained personnel with appropriate protective gear and in accordance with the law and producer guidelines—and not by children or pregnant women. Potential impacts of chemical run-off on local communities are assessed and managed. In shrimp production, no antibiotics use is permitted. The storage, handling and disposal of hazardous materials and waste must be done responsibly, according to the law and minimizing their respective potential impacts on the environment and human health.



Pest Management

An integrated/alternative disease management approach is developed and implemented. (Equivalent to Integrated Pest Management - see Annexure)



Area Based Management

The producer participates in area based management schemes to increase transparency and coordination among entities operating in a common area for certain activities (e.g., stocking, harvesting, medical treatments, number of escapes, etc.).



Labor Rights

Management is aware of and complies with local labor legislation and the ILO core labor standards. Management actively manages its labor issues (e.g., child labor, forced or bonded labor, freedom of association, discrimination and gender equity, living wage, use of contractors to avoid social benefits, health and safety, etc.) and actively monitors compliance in its operations.



Operational Health & Safety

Applicable Operational Health & Safety (OHS) protocols are followed, which can include: adequate training, accident reduction programs, formal documentation and grievance procedures, and if applicable, personal protective equipment provision and hazardous substance monitoring and testing.



Local & Indigenous Communities

The rights of local people are respected, which can be assessed by: demonstrated and non-contested rights to utilize the land/coastal environment and recognition of and respect for other legal or customary rights; negotiations with indigenous people based on FPIC (free, prior, and informed consent); as well as other potential measures. Issues of gender representation, representation of traditionally marginalized groups, health and clean water, resource diversion and scarcity, ecosystem services, and potential impacts on livelihoods and smallholders, are considered and structured into consultations. Engagement and dispute resolution processes and instances are fully transparent.



NOTE: Salmon and shrimp aquaculture are highlighted in this chapter. Yet the indicators presented have applications, to varying degrees, across all forms of aquaculture. However, a species-specific, regional, and local perspective is required to properly manage risks and mitigate associated impacts. See Tools and Resources for links to information and specific criteria for responsible aquaculture production of other species beyond salmon and shrimp.