

Technical Assistance to facilitating a Fair Trade label for aquaculture fish products and exports in Africa

Component II: Develop a training manual and host a training workshop for the certification and exports of fair trade fish products – P155

9.ACP.RPR.007

**TRAINING MANUAL
Ethical labelling of African farmed fish**

November 2010



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Glossary

ACC	Aquaculture Certification Council of the GAA
ACP	Africa Caribbean and Pacific countries
BAP	Best Aquaculture Practices (an ACC standard)
C&F	Cost and freight paid – i.e. delivered to port in the importing country
FLO	Fairtrade Labelling Organisation
FOS	Friend of the Sea (certification scheme)
GAA	Global Aquaculture Alliance (US certification body)
ISRTA	International Standards for Responsible Tilapia Aquaculture (WWF standard)
MSC	Marine Stewardship Council
SAI	Social Accountability International
SPS	Sanitary & Phytosanitary (Food safety & Hygiene)
WWF	World Wildlife Fund

1. Introduction

The purpose of this manual is to provide initial guidance to African fish farmers on ethical labelling. The key questions addressed are:

- What is ethical labelling?
- What is entailed in achieving the required ethical standards?
- Is it worth it – i.e. what are the economic and other benefits?

This manual accordingly starts out with a brief investigation of the underlying context – i.e. what are the essential factors involved. This involves discussion about branding because that is essentially what is being discussed here – ethical brands or labels.

The manual then goes on to describe and compare some of the more relevant ethical labelling schemes. These all differ - although they overlap to a large but varying degree. Clarifying which scheme does what is then important for farmers trying to decide which one to opt for. However, this does not change the fact that to a large degree the scheme will be chosen by the end user – i.e. if you want to sell to Wal-Mart or Sainsbury's you have to accept their choice of labelling scheme.

The underlying objective is to set out what is entailed in the process. There are three aspects to consider here

- The cost of the certification “audit” itself (i.e. proving that the standard has been met)
- The cost of making the changes required (i.e. the cost of complying with the standard)
- The ongoing cost of maintaining –and in some cases improving - compliance

What the manual does **not** do is to provide a step by step guide to the certification process itself, for three reasons:

- i Each ethical scheme provides this itself and so replicating it here would be simple duplication (web links/routings are provided)
- ii The schemes differ in both content and coverage, and
- iii The philosophy behind the schemes also differs, and this is reflected in fundamentally different approaches in spite of the commonality of the issues addressed.

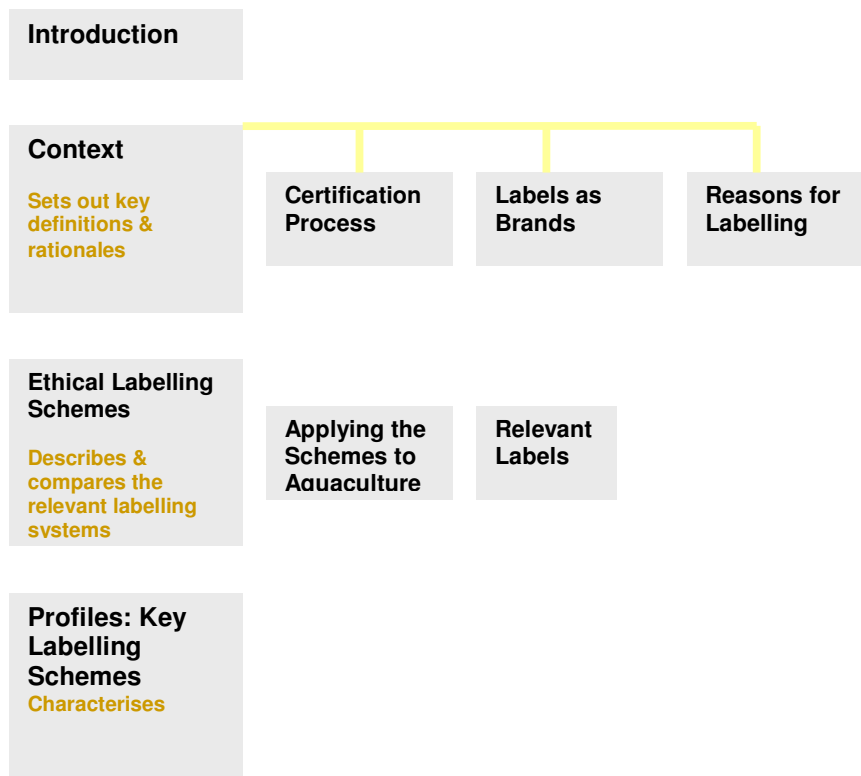
In short - there is no generic format that can be applied across the board. Thus although all schemes cover essentially similar ground they do so to differing degrees and in different ways.

This manual is then designed primarily to guide farmers towards ethical certification, rather than to replicate the detailed processes defined by the various schemes. It moves progressively from the broad **general** issues – setting out the rationale for ethical labelling - to the **specific**, including descriptions of the more relevant labelling schemes. Finally the economics of labelling are considered, essentially to help farmers assess

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whether the process is a worthwhile and viable option for them. Figure 1 sets out how the manual is structured to achieve this.

Figure 1: Structure of the manual



2. Context

This section looks at the underlying factors involved in ethical (and other) labelling. Throughout “labelling” is used as shorthand for what are also called ethical certification schemes – i.e. organisations involved in **distinguishing a given product on the basis of ethical criteria related to its production**, be these criteria social, environmental or humane, etc. The central objective is fairly straightforward – i.e. to identify a product as being produced in a certain way - a way that accords with certain consumer preferences. The practical reality is a lot more complex, and the purpose of this section is to help understand this. Firstly, the certification process is briefly explained and this is followed by a brief discussion about branding, looking the issues more from a farmer/producer and marketing perspective. Finally, the broad scope for ethical and related labelling – as this applies to fish and seafood - is set out.

2.1 The Certification Process

Although the schemes differ, the essential processes are common – as they are to most certification schemes. Essentially there are three components to such schemes based upon the “**standard**” i.e. the set of requirements which have to be met to qualify for the scheme (or label):

- **Standard setting** by the assurance scheme (label) owners/managers,
- **Certification of compliance** with the standard(s) by the farms, and
- **Accreditation of the certifiers**: i.e. their formal authorisation to certify farms.

There is another entity that can also be involved: a high level **accreditation authority** that provides oversight and vets the standards and the schemes themselves. A key requirement throughout is avoidance of conflict of interest – i.e. certifiers must be demonstrably independent from standard owners. This is to eliminate the risk of influenced decision making - e.g. a standard owner’s interest in widening their client base might bring pressure to bear on certifiers to go easy on prospective member farms. These various functions can be defined as follows:

- **Standard setting**: defining a set of mandatory operational parameters that achieve the defined objective. This is the standard – often set out as a code of best practice that governs the process in question. Standard setters reflect specific goals and examples include Fairtrade (FLO), GAA or GlobalGAP. Some are backed by legislation (to which they must adhere - e.g. quality and organic standards), whilst others stand or fall by their reputation and relevance, e.g. Fairtrade.
- **Certification of compliance** involves establishing that a given operator (farmer or processor) complies with the standard and continues to do so. Approved specialised certifying organisations like Ecocert undertake this role as do global generalists like SGS (Société Général de Surveillance of Switzerland) who can certify virtually anything tangible.

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- **Accreditation of the certifiers:** there are also national and international standards that govern the way the certifiers themselves practice. These standards define how key classes of professional activities should be conducted. They are set by bodies such as the International Organisation for Standardisation (ISO) or its EU equivalent (EN – European Standards). The two relevant standards for certifying entities are ISO/IEC Guide 65 and EN45011, the specific standards for certifying products.
- **The accreditation authority** is a senior state or international body able to provide widely credible oversight for the scheme itself. The International Social and Environmental Accreditation and Labelling (ISEAL) Alliance is a relevant example with its Code of Good Practice for Setting Social and Environmental Standards

Most of the organisations described here focus on one of the first two of the categories listed above (i.e. they set standards or certify compliance). Some have dual roles though, both setting the standards and certifying client firms, using “arms-length” independent subsidiaries to do the latter.

Figure 2: Generalised Certification Scheme Structure

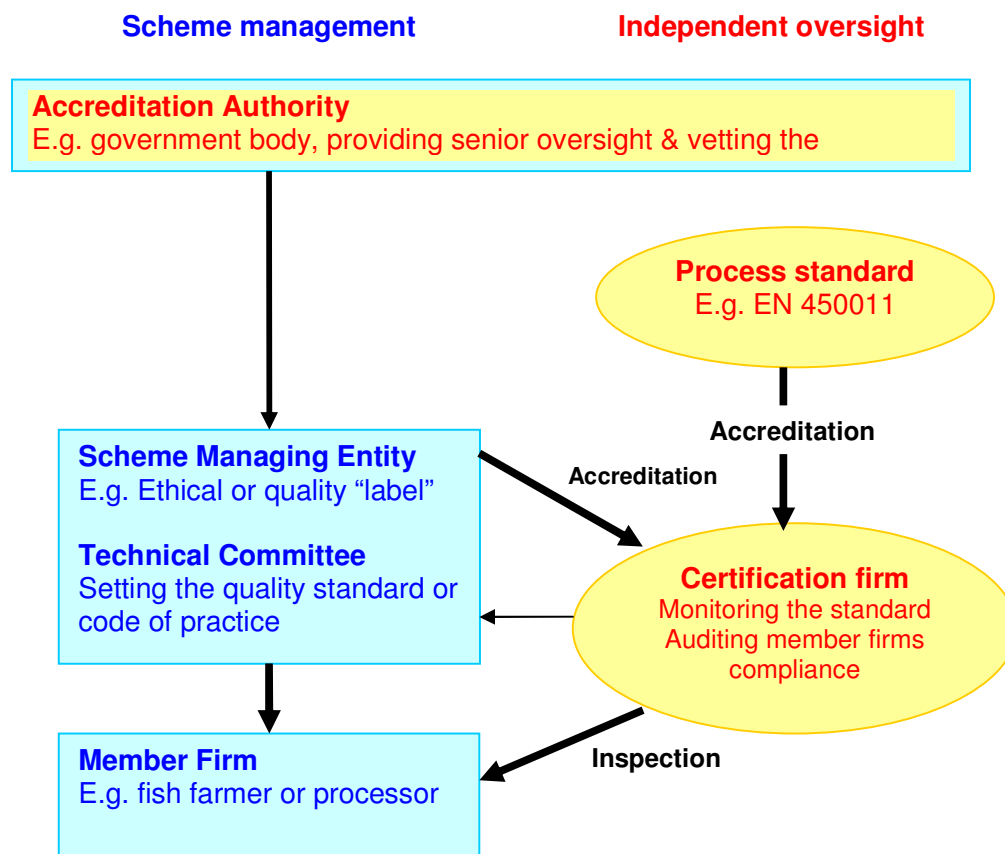


Figure 2 summarises the core elements of the schemes described above in what could be described as the “European model” for quality assurance. The point it emphasises is the need for transparently independent certification systems, themselves accredited to exacting professional standards. Accreditation involves a dual process – with the certification firm accredited (i) to the certification process standard (e.g. EN45011 of ISO 65) and (ii) by the assurance scheme (e.g. GAA ACC, GlobalGAP), with the latter accreditation dependent upon the former. As stressed above, separation of management of the scheme (standard bearer) from certification of member firms is seen as a key guarantor that conflicts of interest do not undermine the scheme’s integrity.

2.2 Labels as Brands

Commercial farmers have a different perspective from the certification sector. They see things in terms of market access and prices. From this market-orientated perspective, certification is essentially a matter of branding. This section accordingly starts with a brief analysis of the nature of a brand.

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What is a brand? A brand tends to be thought of as a product, a logo, a name, even a distinctive form of packaging. In fact it is none of these things (although they can all contribute). A brand is actually something that resides within the collective purchasers' minds – and is fundamentally a form of recognition – recognition that a given item is an acceptable or better response to a given need. The wider the recognition - and the more hard-wired the message – the stronger the brand. Attaining this recognition – brand building – is the issue. Seen from this perspective, there are at least two types of brand:

- **Consumer brands** (or retail brands) are widely recognised “household name” brands that depend upon widespread advertising and promotion – which can be *hugely expensive to both build and to maintain*. Image is crucial and media coverage is an essential brand-building tool. Indeed in some cases the actual substance of the product is far less important than the image (e.g. designer-label items). The very high cost of brand building results from the need for regular use of TV and other major media, though this can be targeted (e.g. women's magazines, newspapers food sections for seafood) to help reduce these high costs.
- **Trade brands** are much narrower concepts, targeted very specifically on those within the industry. This means that only a few hundred or at most, thousands of people need to be influenced rather than millions. The focus is accordingly much tighter, concentrating upon technical rather than image-based aspects. And of course the cost of brand building is far lower. The publicity vehicles employed tend to be industry-orientated, e.g. the trade press, seafood trade fairs and expos, targeted brochures and literature and direct approach to traders etc.

The distinction between trade and consumer branding is partially a function of the stage along the value chain that is involved. Trade brands target the stages in the value chain that precede sale to the end user - whilst consumer brands target the end user of course. Understanding the value chain is then important.

Indirect branding. There are other approaches, one of which is to join an already established brand. An example of this with obvious relevance here is the adoption of an **international certification scheme's brand** by subscribing to them (and meeting their criteria and standards).

Generic branding where a product rather than an individual company is promoted is also highly relevant here. Where a number of similar relatively small players are involved, this allows a joint approach from which they all should benefit. There are risks in that some members may not be able to support the brand adequately, and fail to meet the “promise” made, so letting down their partners. However, given adequate discipline, this coupled with the trade approach mentioned above may prove to be the most cost effective option for some African fish farmers. The need to maintain robust systems able to ensure compliance universally within the group is obviously paramount in this case.

A variant of this is **national branding** where a product group from one country (or region) are branded by nationality, irrespective of the individual product specification or

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producers. In this case the products would be seafood sold under a national African brand (e.g. “Africa Pride”) or perhaps a regional (e.g. East African) brand. Some feedback received during this project suggests that this could be a positive avenue to explore here.

The role of Big Retail and Big Foodservice

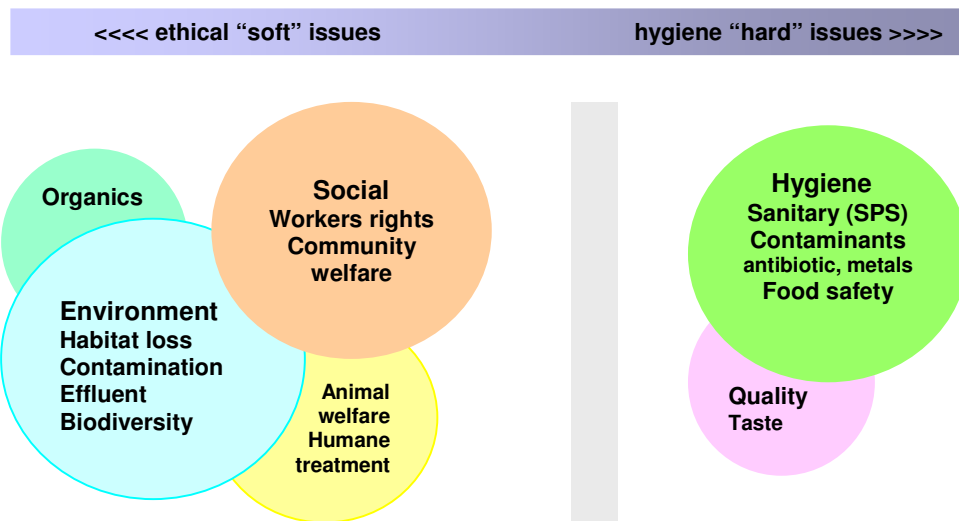
Product brands have increasingly been replaced by retailer brands – i.e. those of the big retailers (super/hypermarket chains). To an extent this occurs through use of “own” or “private” label where the supermarket chain’s name and logo replaces those of the producer (who may well have a brand of their own in the same outlet). This is not the only way this is expressed though, because supermarkets also claim that their overall offer (i.e. everything they sell) includes guarantees. Initially these guarantees related to quality and food safety but increasingly it has been ethical aspects addressed – the message being “you can buy whatever we sell with a clear conscience”.

This has led to the major retailers – and to an extent major foodservice – becoming leading promoters of ethical labelling, rather than the consumers. Either in response to latent consumer concerns (or in anticipation of them) they have pushed the issue back up through the supply chain, bringing pressure to bear on processors/importers who have in turn imposed this on their suppliers. The underlying principle is that big retail/foodservice believe that their customers expect them to be ethical as part of their “contract” with them - i.e. this is a given. They are of course also keen to avoid bad publicity (e.g. TV programs on child labour or wilful wetland destruction). Seafood, much of which is sourced from developing countries, has become a key part of this campaign. In short, big retail and big foodservice have become key drivers in the ethical labelling of seafood

2.3 Reasons for Labelling

An essential distinction that needs to be made at the outset is that between ethical issues and those concerned with food safety, hygiene and quality. The latter are included in some ethical standards and so have become part of the mix discussed here. Obviously food safety is particularly crucial for fish products and achieving the associated standards is a clear imperative for export to all EU or other OECD markets. We talk of these as “hard” issues, whilst the ethical concerns that are central to this manual are essentially driven by consumer perceptions – and can be thought of as “soft”, i.e. whilst food safety is distinct and measurable, the degree to which reality actually underpins some “soft” ethical categories can be questionable. Figure 3 makes these distinctions diagrammatically.

Figure 3: Ethical labelling



For example, organic products can be completely indistinguishable from their non-organic alternatives, even with advanced analytical techniques. Ethical labels can also be more tenuous because there is frequently confusion in the customer’s mind as to what they actually signify. Broad concerns about the environment and global poverty appear to be the principal drivers, but little focused thought is involved. However whatever the consumer perception actually is, the ethical agenda clearly does have a fully coherent reality of its own as far as the trade is concerned, and thus the need to address it seriously.

One implication of the “soft” nature of ethical labels - and their lack of clearly measurable absolutes - is the need to address the **process** rather than the **product** in order to define their scope. This is why certification schemes – which are able to assess the processes involved – are essential here. Box 1 lists some of labelling schemes active in the fish and seafood arena. The hard/soft duality is expressed here by separating the food safety and the ethical categories, classifying the former as relating to physical health, the other as a matter of consumer’s conscience

Box 1: The Fish and Seafood Labelling - the Principal Issues

Food Safety labelling (*concern about family health i.e. the consumer’s body*)

- **Quality assurance** provided by organisations like BRC (British Retail Consortium) whose primary function is to reduce risk for retailers from suppliers’ hygiene or quality failures
- **Organic aquaculture** where production follows established organic principles -. There is also often an overlap between organic and environmental labels – some of which have a bias towards organic practices (e.g. Fairtrade)

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- **GMO-free.** Genetically modified organisms are banned from the EU food chain and of much concern to consumers globally. They are normally banned from organics anyway, but are an issue in their own right in some OECD markets

Ethical labelling (*issues of conscience i.e. the consumer's mind*):

- **Environmental:** e.g.
 - **Sustainable aquaculture:** arguments supporting this include cultured seafood taking pressure off wild stocks, so generating a sustainability benefit. An alternative story is production of low protein feeders such as basa so as not to create an indirect drain on marine resources through use of fishmeal.
 - **Sustainable wild fisheries:** e.g. fisheries certified as exploiting the resource sustainably under an enlightened management regime
 - **Environmental impact:** Also a “best practice” aquaculture issue, preserving mangroves or other wetland areas like freshwater marshes and reducing pollution in outflow water and proper land use are key determinants of acceptability
- **Socio-economic justice:**
 - Employment generating **fair incomes** for poor communities, especially in remote dispersed rural communities where alternatives are limited
 - **Social justice** – e.g. protection against exploitation by the powerful – preventing abuse of land rights or use of child labour.
 - **Fairtrade** – ensuring that primary producers receive a fair price in relation to their production cost whilst their workforces enjoy fair terms of employment
- **Other: humane/animal welfare:** increasingly a concern for northern EU consumers with key issues being crowding during rearing and humane slaughter procedures (e.g. for farmed salmon)

Food safety and hygiene

Mention needs to be made of food safety here. It is not a central subject for this manual but is intimately involved with it through many of the labelling schemes. Moreover it is a “hard” issue verifiable through laboratory testing if need be, and having very serious direct repercussions when it fails. Indeed the implications are sufficiently severe for seafood to often warrant a separate state-run monitoring system to manage these risks.

The **EU SPS (Sanitary & Phyto-Sanitary)** food safety system is one of the more stringent. Set up under DG SANCO (EC Regulation 853/2004), this is designed to ensure seafood is safe and fit for human consumption. The clear imperative here is to protect EU consumers from fish that is contaminated or otherwise unfit to eat. The principle focus is upon pathogens (e.g. bacteria) and contamination by heavy metals or antibiotics. The original focus on physical product testing has been replaced by a “process” system (although testing can be reinstated if need be). This EU process system involves three components:

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(i) a national relevant or **competent authority** who takes responsibility for ensuring that that national seafood companies maintain hygiene standards, and is backed up by:-

(ii) An **inspectorate** able to visit and inspect seafood processing or handling facilities within the export-orientated value chain and a:-

(iii) Reference **testing laboratories** equipped and staffed to test for microbial, chemical and biochemical (antibiotic) contamination.

This national system vets their home country seafood processors, requiring these plants to have a credible HACCP (hazard analysis at critical control points) or similar internal control regimes in place. Eligible plants are given a code number (the EU number) and are then free to export to the EU, subject to periodic EU reviews of the national SPS system and occasional spot testing of products.

This system is rigorous and has to some degree obviated the necessity for a parallel labelling system (i.e. food safety can be taken as a given here). However, many major retailers prefer the additional security of a quality label and so this remains an issue for the labelling schemes - especially those designed to reduce risk for retailers. Moreover, the adoption of a “process” approach for food safety tends to align this with ethical labelling – itself dependent upon process monitoring. There could then be scope for common systems – possibly reducing some ethical certification costs.

3 Ethical labelling schemes

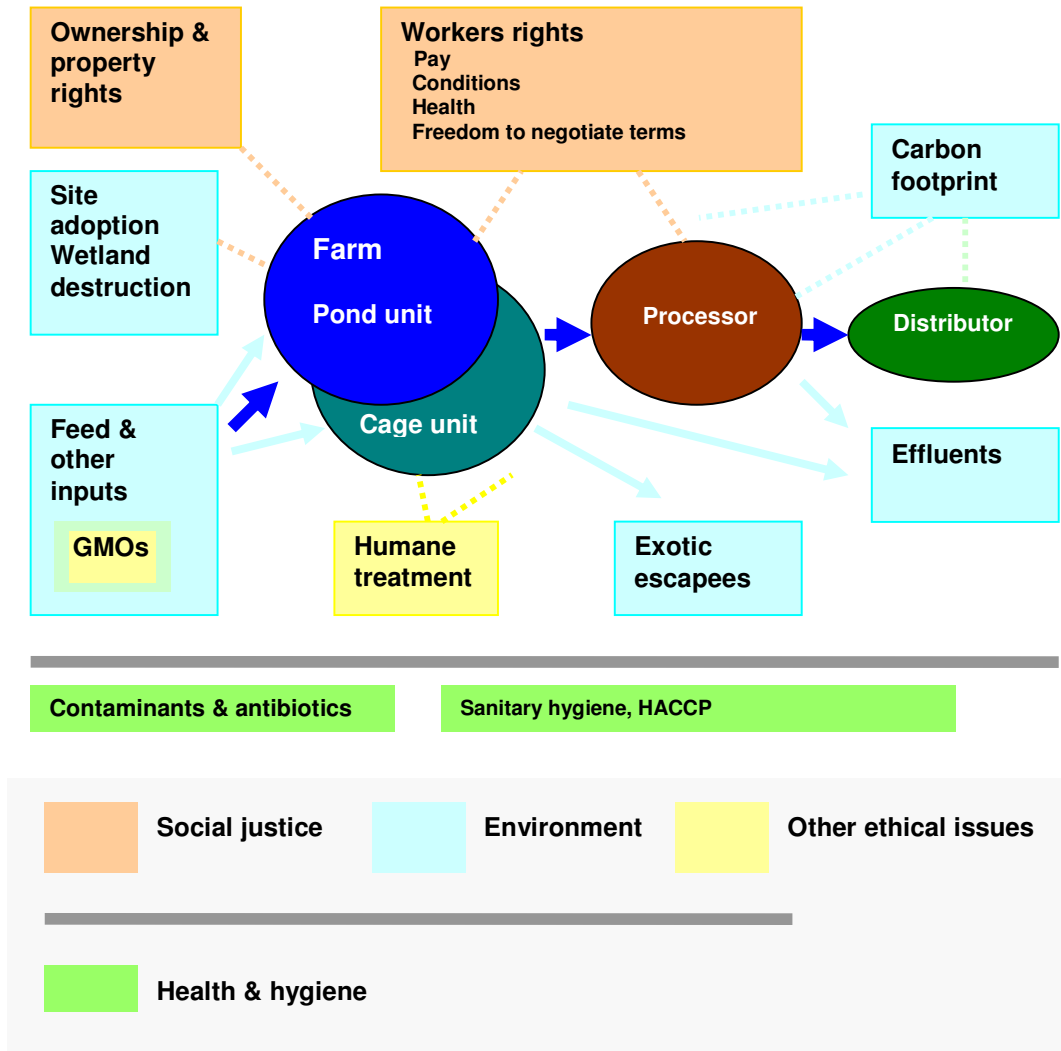
One of the major problems with ethical labelling is the plethora of organisations involved. Their coverage, approach and methodologies overlap but usually also differ substantively and so there is no common generic system that farmers can adopt as yet. Indeed such harmonisation between the key players in this field seems unlikely any time soon.

Thus farmers have to choose - a choice that is often itself imposed by their choice of markets to enter - as mentioned above (i.e. the target market makes the choice – and to supply them, the farmer has to adopt their preferred scheme). The field can be narrowed down though and choices tailored to both the farm's capacity to match requirements and the market segment targeted. This section looks at this aspect and in figure 4 sets the scene by relating ethical issues to the basic aquaculture model.

3.1 Applying the Schemes to Aquaculture

The first question to address is where are the critical points within aquaculture systems where ethical concerns are likely to arise. These are of course defined by the ethical schemes, but there are aspects common to most schemes where ethical issues might arise in a generalised aquaculture system (Figure 4). The diagram distinguishes between environmental, social and other (e.g. humane) aspects, and includes the food safety criteria that can be linked to the ethical within labelling schemes. What the diagram makes clear is the degree to which there are ethical implications at every stage of the aquaculture process. Inputs and outputs along the production cycle generate environmental issues whilst at each stage in the process there are social aspects to address.

Figure 4: Ethical certification issues for aquaculture



3.2 Relevant Labels

There is a wide spectrum of labels that cover the “soft” issues described above. With food safety increasingly taken as a given (i.e. assumed to be guaranteed so needing no emphasis) these are becoming key distinguishing signals in the market place. Figure 4 and Boxes 2 and 3 below list some of the more relevant of these – firstly listing entities

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concerned with ethical labels (Box 2) and subsequently those dealing with health and quality (Box 3).

Box 2: Some Major Labelling organisations with a Seafood Remit

- **Aquatic Environment labels (Eco-labels)**
 - **Aquaculture Certification Council (ACC)** is the certifying body for the BAP (Best Aquaculture Practices) program of the Global Aquaculture Alliance (GAA) emerging as one of the most widely recognised aquaculture certifiers covering environmental issues (pollution, mangrove destruction). The ACC also covers two other areas – ethical and contaminants including antibiotics.
 - **The WWF Tilapia Aquaculture Dialogues** - an aquaculture partner to the Marine Stewardship Council (MSC) the leading sustainability label for wild marine fisheries which has no aquaculture remit. The Dialogues have developed a farmed tilapia standard - International Standards for Responsible Tilapia Aquaculture (ISRTA).
 - **Seafood Choices Alliance** is a global sustainable seafood trade association founded in the USA in 2001. SCA promotes sustainability through market forces, linking the commercial world to conservation through sourcing from sustainable capture fisheries and aquaculture.
 - **Friend of the Sea** is a new certification body whose remit is largely confined to the Mediterranean (Italy, Portugal) and the USA. Its USP (Unique Selling Point) is the claim to certify both wild fisheries and aquaculture products within a single all embracing system, covering sustainability and environment.
 - **National alternatives:** there are also national schemes such as the Responsible Fishing Scheme of Seafish, the UK's National Fishing Industry Authority. This certifies fishing vessels as using environmental responsible methods.

- **Social/environmental and other ethical labels**
 - **Fairtrade Labelling Organisations International (FLO)** is an independent body that licences a consumer label (the Fairtrade mark) to producers certified by the Fairtrade Labelling Organisations International. This guarantees that primary producers in developing countries receive a fair price – i.e. one which more than returns sustainable production costs. Seafood is not covered as yet, but a shrimp standard is being developed.
 - **Environmental Justice Foundation (EJF)** links environmental issues to human rights, with a mission to protect environments as well as the people critically dependent upon those environments.
 - **ECOCERT** is a French label accredited by COFRAC (the French Committee for Accreditation) to EN 45011/ISO 65 standards. It covers organic foods and other agricultural products as well as quality/safety and fair trade
 - **RSPCA Freedom Food:** the UK Royal Society for the Prevention of Cruelty to Animals who take an interest in farm practices and represent the more responsible element of the animal rights movement.

- **Labels with a primary food safety & quality focus**
 - **GlobalGAP** The Good Agricultural Practices standard of the former Euro-Retailer Producer Working Group (Eurep) is a very broad supermarket-backed retailers initiative covering value, quality assurance, employee health & safety, environmental

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- standards & ethical trading with emphasis upon traceability. It has developed a specific Integrated Aquaculture Assurance standard (IAA) & now has a tilapia variant.
- **BRC Global Food Standard** is the food quality assurance system of the British Retail Consortium which is the major body representing British retailers. It acts for retailers as a guarantor of quality of food (and to help limit legal liability for negligence). The BRC's "√" mark is becoming a global standard for producers/processors supplying major retailers.
 - **Label Rouge**: A French guarantor of exceptional quality mostly applied to agricultural products but now encompassing aquaculture (salmon especially). High quality is important but flavour is crucial for this gourmet orientated standard.

The Organic Labels

Organic labelling could be seen as a variant of its ethical equivalent – especially regarding environmental aspects. Aquaculture standards have been developed (salmon, shrimp) and have a position in the market – albeit a minor one. The criteria that have to be met can be onerous (e.g. the exclusive use of fishmeal made solely from fish processing trimmings). However, the organic movement is developing a coherent legal basis in each major OECD region. This is most advanced in the EU where it has become part of mainstream EU legislation. This arrangement is summarised below, as are their US and Japanese equivalents:

- **European Union**: organic standards have a legal basis embodied in **Regulation (CEE) 2092/91**. EU organic schemes must adhere to the general terms of this regulation, which sets standards that certifiers (mostly private firms) must adopt. Only products certified in accordance with this regulation can be deemed to be organic and display official organic labels in the EU. The aquaculture standards require that (i) there are no GMO or artificial pigment inputs; (ii) sustainable feed is used; (iii) there is limited use of agrochemicals, prophylactics and veterinary pharmaceuticals; (iv) there are low stocking densities and (v) environmental impact is minimised.
- **USA**: The USDA monitors US organic production under the **Organic Seal** system of National Standards for Organic Crop & Livestock Production & Handling. Aquaculture is not included as yet though the USDA **National Organic Program** (NOP) aims to develop a National Organic Aquaculture Standard.
- **Japan** also has an organic standard – termed the **JAS standard** which is administered by the Ministry of Agriculture Forestry & Fisheries (MAFF).

Box 3: Organic Labelling Organisations

- **Agriculture Biologique AB (France)** is the main national organics standard/certifier, whilst **Aquabio (France)** is a specifically organic fish farming body. **Qualite-France** also certifies to the French organic standard.
- **BioErnte (Austria)**
- **BioGro (New Zealand)**
- **BioSuisse (Swiss)** the organic standards agency in Switzerland, backed by Swiss

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Import Promotion Programme (SIPPO)

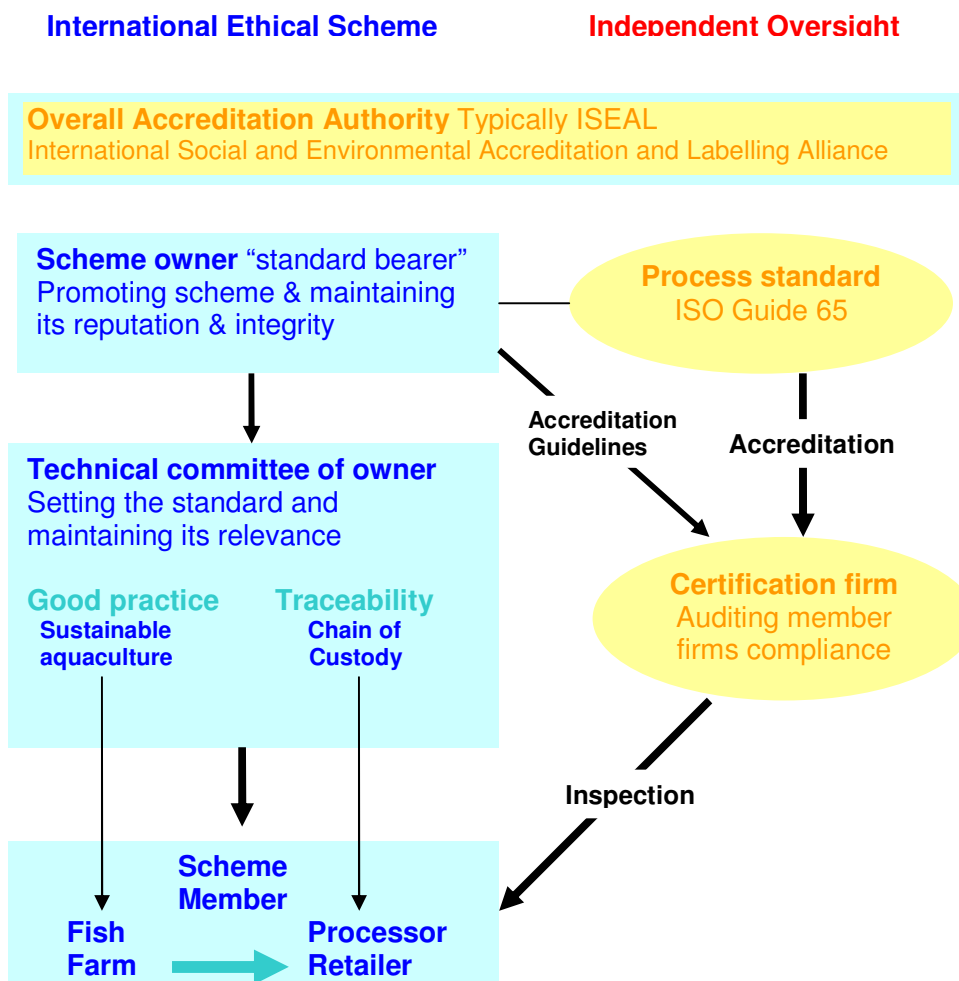
- **Debio (Norway)**
- **Demeter (Global)**
- **Irish Organic Farmers & Growers Association (IOFGA Ireland)** now involved in aquaculture products
- **Naturland Verband (Germany)** the German organic standards which has worked on fish culture since 1995 including that of shrimp since 1999, and has certified a segment of the Lake Victoria Nile perch fishery (Bukoba region)
- **KRAV (Sweden)**
- **Red Label (Denmark)**
- **Soil Association (United Kingdom)**

Evidently ethical branding is a crowded and complex field, a complexity that is at least partially a product of the rapid recent growth of ethical and related certification. There is a clear generic difference between the ethical and the organic certification organisations. The former are mostly sector-specific, targeting discrete parts of the industry (e.g. aquaculture or segments of agriculture). The latter (i.e. organic certifiers) are far more fragmented and are organised geographically - i.e. standards tend to be national with each label recognised in its own market (e.g. Naturland in Germany, Soil Association in UK) but perhaps not beyond. An international champion might emerge (under EU pressure), as might a coordinating body able to rationalise this dispersed network of agencies.

3.3 Ethical Certification

Certification for ethical labels broadly follows the formula described in Figure 2 above. There are differences though, and Figure 5 provides a similarly diagrammatised description of an ethical scheme dealing with seafood. These differences partially arise from the “process” nature of ethical labelling: because physical testing is largely irrelevant (there are no tangible qualities to test) maintaining the integrity of the process is crucial. This is borne out by the importance given to both regular certification audits and reliable traceability (along the “chain of custody”)

Figure 5: Certification Model for Ethical schemes



The point has been made that whilst the schemes all differ, they do have commonalities. The certification process is one of these as is the range of issues that they address. Figure 6 below provides a summary of these issues, showing how they fall into a number of discrete fields:

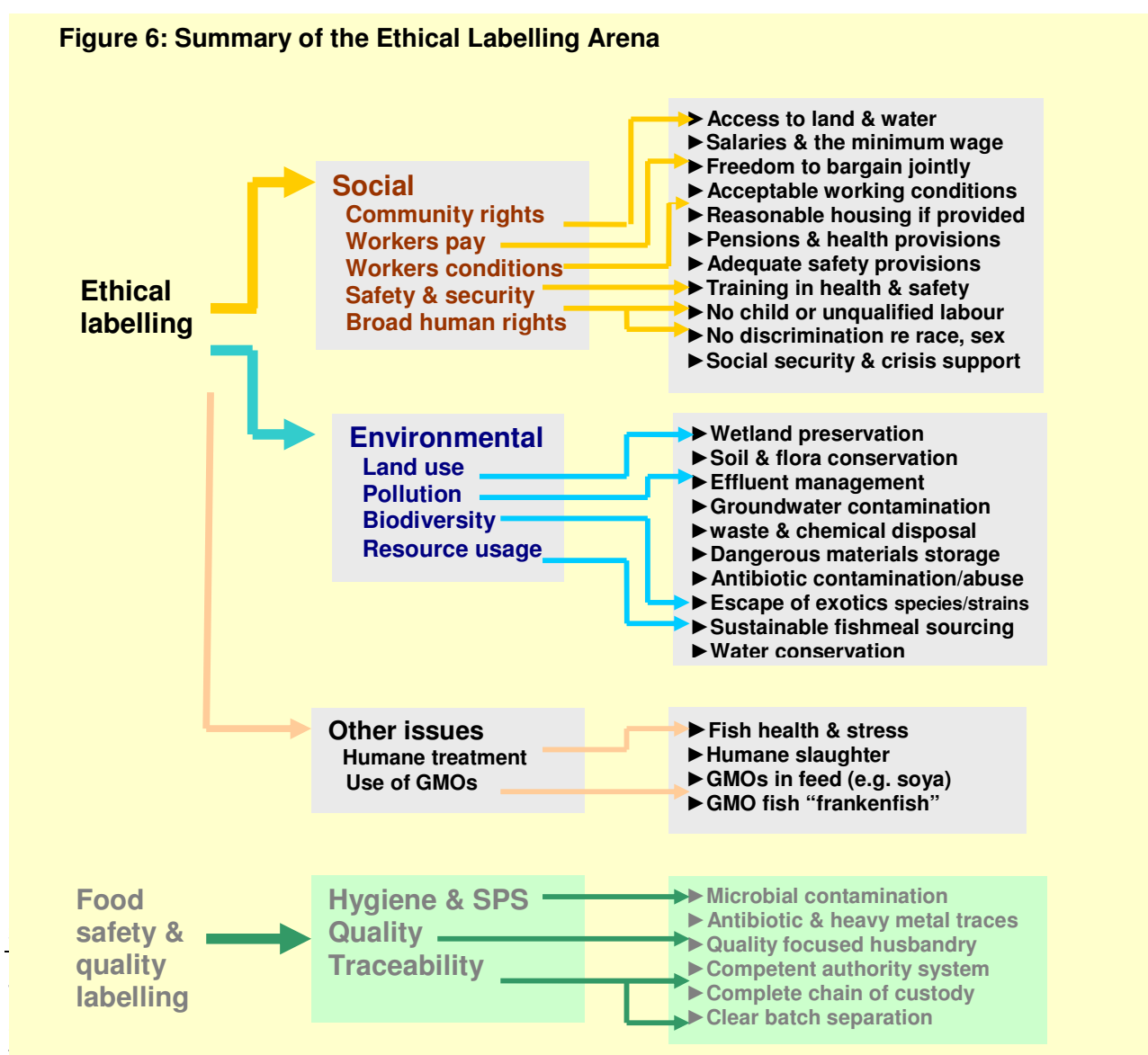
- **Social**
 - Traditional community rights
 - Workers pay & conditions
 - Workforce HRD

- **Environmental:**
 - Water quality
 - Land use
 - Biodiversity

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- **Other**
 - Humane (animal welfare)
 - GMOs (a complex issue with environmental & health implications)

The diagram sets out the three main ethical themes discussed above and lists the principle issues that arise in each theme from an aquaculture perspective – i.e. it represents an indicative **check list** of the key current ethical concerns as these relate to farmed fish. The diagram also sets out the “hard” food safety/hygiene agenda, so this can be compared with and distinguished from its “soft” ethical equivalent.

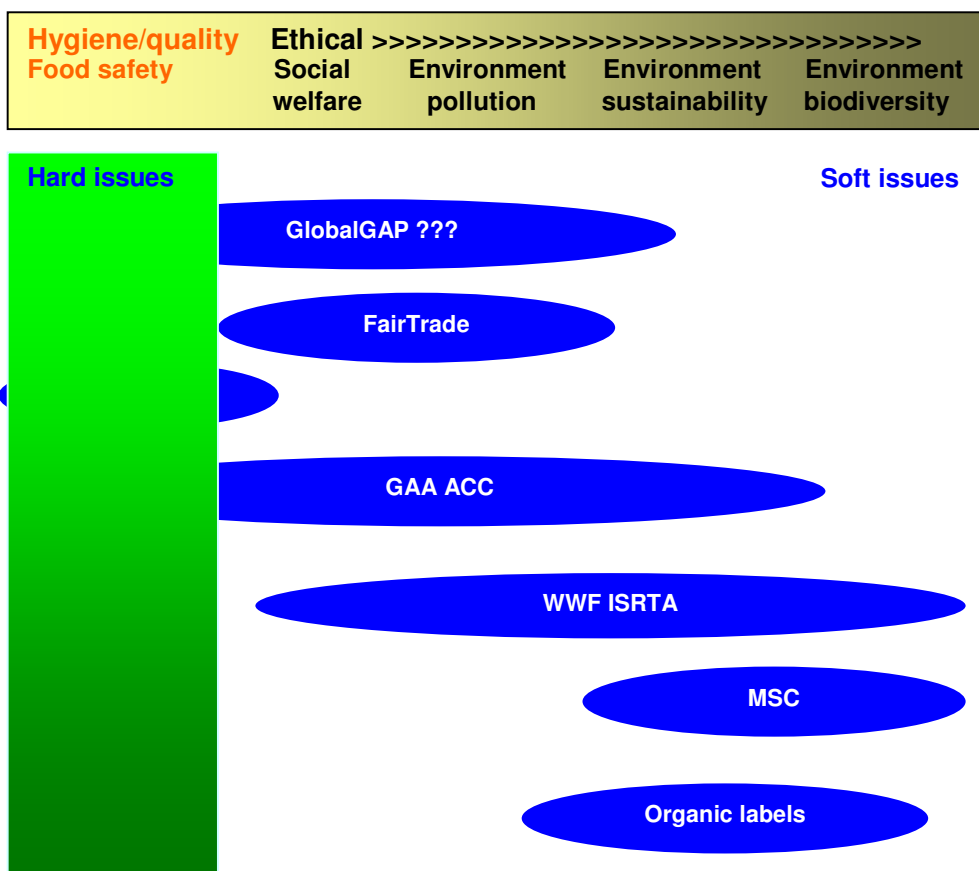


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schemes. There are other important differences (in underlying approach, in definition of the standard, in audit procedures and in certification arrangements), but these are dealt with below in the profiles of the different labelling organisations.

Figure 7 shows how the various scheme's remits relate to the spectrum of ethical issues, distinguishing these "soft" aspects from "hard" food safety. The reason the latter is included is the degree to which it is also part of the scope of many labelling organisation's standards. It is then part of the package for several of the standards.

Figure 7: The Ethical Labelling Spectrum – Food Safety to Organics



What is clear is the range of options that the relevant labels provide – Some have a narrow focus (e.g. BRC – concerned with food safety) or MSC, which although not really relevant to most aquaculture (other than as a guarantor of sustainable fishmeal/oil for feed), exemplifies concern with the resource and its sustainability. Others like the GAA ACC and GlobalGAP span the range with a coverage that includes food safety as well as moving well into the ethical realm.

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4 Profiles of key labelling schemes

Four labelling schemes are seen as being potentially most relevant to African commercial fish farmers. Between them they cover a range of ethical issues from hygiene to humane practice, with the crucial social and environmental agendas represented in all of them. Each one though has a different focus, a different approach and is structured in a different way. Thus although much of the coverage is common, the way it is structured is definitely not. This section characterises the four systems in order to display these differences and so help commercial fish farms understand what is entailed and identify which scheme – if any - suits them best.

As mentioned above, this manual does not provide a detailed, item by item, how-to-do-it guide. The assurance schemes provide this in the explanations and definitions of their standards. The intention here is to provide a condensed and more manageable version of the standards (some of which run to 40-45 pages) so that farmers can gain (i) an overall idea of what is entailed, (ii) an indication as to what specific changes on their farms might be required and (iii) the basis for making a choice between standards.

In short – the objective is to make this complex area as easily digestible as possible. So, in order to clarify the common ground between the standards, a colour coding system has been used for the major themes– brown/orange to signify social issues, blue for environmental, buff or other ethical issues (e.g. GMOs) and green for food safety.

A numerical comparison has also been made, as a more objective look at these standards. This is based upon the frequency with which the key themes are referred to in the standard, adjusted for the respective weight given to each issue. This is of course a simplistic and blunt instrument as it assumes that all terms in the standard are equal (which they are not) but does at least provide a quantified basis of some sort for comparison. It is then useful to this extent.

These four selected standards, listed below, represent the issues that are most technically relevant to African fish farmers as well as those most likely to find traction in EU markets. In short they are the ethical standards most likely to generate a price premium and/or to increase access within these markets.

- **Global Aquaculture Alliance (GAA ACC) tilapia standard: Best Aquaculture Practice (BAP)** – an aquaculture-specific standard but within this remit, broadly based and so covering most themes.
- **The WWF IRSTA (tilapia) Standard**, developed through the consultative “**Aquaculture Dialogues**” another aquaculture-specific standard and the likely major future competitor for GAA ACC, but with a greater environmental/sustainability focus.
- **The Fairtrade standard** (FLO International and its national counterparts). This is an entirely different assurance scheme that has yet to develop an aquaculture standard,

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though is in the process of so doing. Its primary focus is social development rather than environmental sustainability, and it is unique in developing a successful “retail brand”.

- **GlobalGAP:** a label that has grown out of the risk-averse retailers’ priorities, and migrated into the ethical arena as this became an increasingly important consideration for its processor/trader members (responding to their retail clients’ priorities).

4.1 Global Aquaculture Alliance (GAA) standard: Best Aquaculture Practice (BAP)

The Global Aquaculture Alliance is a US controlled standard owned by 11 of the major US fish importers and having a buyer membership of 20 US food companies, 2 Canadian and 2 British food businesses. Certification is administered by the Aquaculture Certification Council (ACC). The BAP standard is divided into three parts to cover hatcheries, fish/shrimp farms and seafood processing facilities. It is a broad standard covering food safety as well as environmental and social issues, making it somewhat of a one-stop-shop and so favoured by some major retailers. However, it is essentially an American system, and as such has had limited impact upon major European players.

BAP is written for single farms and hatcheries and makes no provision for group certification, which limits the scheme’s relevance for small-scale producers. These are often individual farmers who would struggle with the technical content and could not possibly afford US\$500 for annual registration plus an unspecified amount of fees for auditor’s costs and laboratory analyses.

Table 1: The Broad Scope of the Standard

1 Property Rights & Regulatory Compliance
2 Community Relations
3 Worker Safety & Employee Relations
4 Wetland Conservation & Biodiversity Protection
5 Effluent Management
6 Fishmeal & Fish Oil Conservation
7 Soil & Water Conservation
8 Control of Escapes, Use of GMOs
9 Storage & Disposal of Farm Supplies
10 Animal Welfare
11 Drug and Chemical Management
12 Microbial Sanitation
13 Harvest and Transport

Table 1 above sets out the main elements of the standard. The colour coding identifies the main themes that these elements address – orange for social, blue for environmental, buff for humane/other and green for food safety. The GAA scheme distinguishes between critical and more optional criteria. The former – which are

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mandatory (pass/fail) and are underlined in the summary below. The other items collect relative scores which need, on aggregation, to reach a combined pass mark.

Summary of the GAA ACC Standard

Web routing for the standard: [www.gaalliance.org>about BAP \(top bar\)>BAP Standards> BAP Tilapia Farm standards.](http://www.gaalliance.org/about/BAP)

1 Property Rights & Regulatory Compliance

- Correct documentation to clearly establish:
 - legal ownership/rights to land & water
 - regulatory compliance (especially environmental)

2 Community Relations

- Evidence that local community rights of access and to resources (especially water) have been preserved

3 Worker Safety & Employee Relations

- Compliance with local labour laws & minimum wage
- Housing, drinking water, toilet/ablution facilities, cleanliness
- Medical care, emergency response, training, protective equipment, first aid,

4 Wetland Conservation & Biodiversity Protection

- Any wetland loss approved/balanced by creating new wetland
- Extensive earth works (dredge & fill) avoided
- Inlet & outlet water screens in place
- Legal responses to predator control re protected species etc
- Environmentally responsible management of discharge water

5 Effluent Management

Land-based farms

- Inflow and effluent water quality regularly monitored
- Levels comply with BAP criteria for pH, suspended solids, phosphorus, ammonia nitrogen, BOD, dissolved oxygen, chlorides

Cages & net pens in open water

- Water body (lake reservoir)
 - Water quality meets BAP criteria inc at the main outflow
 - Feed input (loading of the system) monitored & BAP compliant
 - And is monitored for all farms within the water body
 - Water quality regularly monitored & continues to meet BAP criteria
 - Feeding management responsive to water quality threats (i.e. reduces as indicators (e.g. dissolved O²) rise to BAO critical levels)

Cages & net pens in streams

- Upstream & downstream ammonia N² & P levels monitored
- Feeding managed to limit downstream increase to less than 25%

6 Fishmeal & Fish Oil Conservation

- Use of feed that declares contents including fishmeal composition

7 Soil & Water Conservation

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- Where pond substrate is permeable, seepage contamination minimised
- Neighbouring wells checked for contaminants
- If well water used, abstraction monitored, minimised & impact controlled

8 Control of Escapes, Use of GMO fish

- Official regulations on importation of exotic species/GMOs obeyed
- Small mesh outlet water screens used to prevent escape by exotics
- All escapes monitored and documented

9 Storage & Disposal of Farm Supplies

- Fuel, oil & agrichemical stored safely & waste disposed of responsibly
- No such chemicals stored near feed, food, housing or harvested fish
- Hazardous storage has warning signs & spill prevention precautions
- All waste stored safely, secured against infestation & disposed of legally
- Fuel storage meets BAP guidelines

10 Animal Welfare

- Biomass density limits applied based on established stress/survival norms
- Feeding or handling stress minimised by adhering to defined tolerances
- Regular inspection of farm to confirm humane conditions
- Prophylaxis, disease treatment, & humane slaughter where necessary

11 Drug and Chemical Management

- Formal fish disease management plan in place
- Drugs used only according to authorised technical specialist guidance
- No banned antibiotics/chemicals contaminants in feed or other application
- Medicated feeds used only in accordance with authorised instructions
- No use of antibiotics or hormones as growth promoters
- If hormones used for sex reversal, workers properly protected
- Survey of contamination risks: of chemical usage pesticides, PCBs, heavy metals

12 Microbial Sanitation

- Prevention of human waste contamination of all water systems (sewerage)
- No use of human waste or untreated animal wastes to fertilize ponds
- No use of uncooked organisms in grow-out ponds

13 Harvest and Transport

- Fish moved in clean equipment & under humane conditions with mortalities documented and stress minimised by limiting travel to 12 hours
- No non-approved chemicals used during transport

Traceability: comprehensive records held on BAP approved online traceability system and updated for all key parameters and each production cycle

Table 2 analyses the thematic coverage of the GAA standard. A comparison is made by assigning a higher weight to the “critical” (C) pass/fail requirements than that of the “scored” (S) 1 to 3 requirements (C items are given double the weight). The analysis has also been adjusted to eliminate overlapping criteria on effluent management, by

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including those for land based culture (normally juvenile production in tilapia farming) and lake cage production – this being a typical pattern for an African commercial tilapia farm. Stream and estuary criteria have then been ignored as their inclusion would constitute double counting.

Table 2: Indicative weighting of main themes: GAA ACC

Standard Theme	Scoring
Social conditions	19%
Environmental impact	51%
Animal welfare	6%
Food safety, hygiene & quality	24%
Total	100%

Audit costs: The costs of making the changes required to achieve compliance to the standard will vary greatly and depend entirely on the individual farm considered. Making an indicative estimate of this is then meaningless. However, the audit process is more easily quantified, at least in broad terms. Again there will be significant variation depending upon the expert time required, travel and subsistence costs and the availability of qualified local staff to undertake the audit (so saving high international consultant fees and travel costs). ACC estimate that a representative figure for an initial audit would be around \$10,000, because African aquaculture is new to GAA ACC. Subsequent follow-up should be rather less expensive.

4.2 The World Wildlife Fund (WWF) IRSTA Tilapia Standard (International Standards for Responsible Tilapia Aquaculture)

This relatively recently developed standard is based upon a series of seven “principles” each of which addresses a number of specific issues or “criteria”. The WWF used the International Social and Environmental Accreditation and Labeling (ISEAL) Alliance’s “Code of Good Practice for Setting Social and Environmental Standards” when creating the standard, and a lengthy series of stakeholder consultations (the “Tilapia Dialogues”). This standard has been defined, but as yet is not fully operational – However, the WWF has formed a partnership with GlobalGAP (see below) to manage the standard in the interim before it becomes an independent entity under the **Aquaculture Stewardship Council (ASC)** which is due to be established in 2011.

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Table 3: The Broad Scope of the Standard (the Seven Principles)

1 Obey the Law & Comply with all National & Local Regulations
2 Manage the Farm Site to Conserve Natural Habitat & Local Biodiversity
3 Conserve Water Resources
4 Conserve Species Diversity and Wild Populations
5 Use Resources Responsibly
6 Manage Fish Health and Welfare in an Environmentally Responsible Manner
7 Be Socially Responsible

Summary of the WWF ISRTA Standard

Web routing: *worldwildlife.org>what we do>global markets>aquaculture (panel on upper right hand side) > Dialogues (lower left hand) >box “four sets of standards” in centre right>tilapia*

1 Principle: Obey the Law and Comply with all National and Local Regulations

Evidence of compliance with

- Local land and water usage legislation including water quality regulations
- Tax and labour legislation.

2 Principle: Manage Farm Site to Conserve Natural Habitat & Local Biodiversity

- Provide comprehensive site data coupled with an Environment Impact Assessment (EIA)
- Show that the tilapia species/strain cultured was “indigenous” to the water body used before 2008 (in Africa – elsewhere was established before 2008)
- Eutrophication mitigation: oxygen diurnal lows at least 65% of ambient saturation level
- Extra protection for low nutrient (Oligotrophic) water bodies – stringent criteria for phosphorus & chlorophyll when Secchi disk signals problems
- Monitoring system for source/effluent water or water body (cages) in place.
- Wetland Conservation: no wetland converted to pond/farm since 1999

3 Principle: Conserve Water Resources

- Nutrient impact monitored: phosphorus & nitrogen inputs & outputs held within defined limits: 27kg input - 20kgoutput phosphorous/tonne fish/year
- Groundwater (well) salinisation increase held below 10% as measured by conductivity

4 Principle: Conserve Species Diversity and Wild Populations

- Screened inlet & outlets to prevent escapes from fish farms, regular monitored and tested by trapping samples. 95% or more sterile/males & cages with 3m clearance below
- Use of secure facilities for transporting live tilapia
- Transgenic fish prohibited as they could out-compete indigenous species
- No lethal methods for predator control, especially red list species.

5 Principle: Use Resources Responsibly

- Efficient use of fishmeal & oil: FIFO (Fish-In/Fish-Out) of less than 0.8
- No fishmeal based on red list or CITES banned fish
- Move to sustainable sourcing of fishmeal via feed firms over 2 year period

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- Assessment of energy efficiency of farm operations

6 Principle: Manage Fish Health and Welfare in an Environmentally Responsible Manner

- Survival beyond 100gm above 65% as a measure of infectious disease control
- No use of banned chemicals, or prophylactic use of antibiotics
- Controls on sex-reversal hormone treatment
- Detailed monitoring & recording use of antibiotics & chemical medication
- Mortalities removed and disposed of responsibly
- Credible fish health management plan for disease prevention and treatment that minimizes antibiotic resistance

7 Principle: Be Socially Responsible

- Ban on use of child labour or forced, bonded, or compulsory labour on ILO definitions
- Ban on discrimination in the work place evidenced by a proactive stance on this
- Workers health & safety: workforce all trained, accidents reported and remedied, adequate insurance in place
- “Fair & decent” wages paid (at least minimum living wage) for fair working hours
- Workers rights for collective bargaining or negotiating employment terms not infringed
- No incidences of abusive disciplinary actions and policies to prevent these in place
- Formal policies in place to deal with labour relations, coupled with emergency alleviation & conflict resolution plans
- Where employees live on-site, provision of adequate: clean, sanitary and safe housing
- Traditional community land and water access, including fishing, not obstructed coupled with conflict resolution measures in place

Table 4: Indicative weighting of main themes: WWF ISRTA

Standard Theme	Scoring
Social conditions	36%
Environmental impact	62%
Animal welfare	2%
Food safety, hygiene & quality	0%
Total	100%

Audit costs: these are hard to gauge as yet as this scheme is novel with little practical experience to base estimates upon. However it would be reasonable to assume that they will be similar to the audit costs for the comparable schemes described here.

4.3 The Fairtrade Foundation (FLO International) Standard

The Fairtrade movement started 16 years ago when a speciality fair trade chocolate was launched. Seven years ago it became an international organisation under FLO International, based in Bonn, under which a network of national Fairtrade entities operates. FLO oversees the operation globally, maintaining the integrity of the standards, but practical implementation is seen as best done nationally because local

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market conditions are crucial. The USA is now included in the Fairtrade scheme, but has been using a different badge ("Transfer US").

One of the most interesting features of FLO is the success it has had in developing a "retail brand". The Fairtrade logo has achieved a remarkably wide recognition, highest in UK where recognition is claimed to be as high as 75% to 80% of consumers. It even extends to the discounters (e.g. Lidl's "Fairglobe"). The fact that it cuts across products, so increasing the regularity with which consumers encounter the logo, is important here. This is true even though its product range remains fairly narrow – tree crops like cocoa, coffee, bananas and tea coupled with some other arable items (cotton, fruit, vegetables).

This wide recognition of the label naturally makes FLO the paramount labelling organisation in the ethical arena, and so its operation merits attention. This is so even though FLO does not yet have any aquaculture standards (though a shrimp standard is being developed). The scheme is, like the others described here, essentially process based, relying upon a standard and certification against that standard. It differs though in the ways in which it generates benefit, which it does in four ways:

- The **Licensing fee** from 1.7% to 0.2% of wholesale value paid to Fairtrade depending upon the volume of sales.
- The **Fairtrade Premium**, paid by the label users (processors, some retailers) used for the socioeconomic benefit of the small producers or workforces involved. A worker-management "**Joint Body**" manages this, which is of the order of 10%.
- The **Minimum Price** set by FLO for each specific product, set at a level that returns a fair return to the producer (liveable earnings) given actual production costs.
- A market-dependent positive **price differential** which benefits the primary or commercial producer, as well as others along the supply chain.

The price differential is the element of most interest to the commercial producer (this differential being that between a Fairtrade labelled product and its unlabelled close competitor). This varies, but a recent Fairtrade study showed differentials between 1% and 60% in 2008, depending upon product. The weighted averages were 20-22% (small producers and commercial farms respectively) and so this appears to be a significant factor. The study acknowledges that there may be some distortion here (like not really be compared with like) but even so, labelling does appear to generate a significant advantage.

Another way Fairtrade differs from other labelling bodies is in its approach to certification audits. These are undertaken exclusively by a dedicated entity, FLO-CERT, which is owned by FLO International. It is an independent and arms-length entity, but conflict of interest is clearly a potential concern here.

Fairtrade sees its primary clients as three categories of producer: (i) the small independent who has to associate through a cooperative, (ii) the satellite element of a nucleus – satellite estate (i.e. the small producers supplying the nucleus under a contract) and (iii) the workforces of commercial producers. It is the latter (hired labour) category that is relevant here, and to whom the standard summarised below refers. Key

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tenets of this are: (i) proper management of the Fairtrade Premium, (ii) freedom of association & collective bargaining, (iii) adequate working conditions and remuneration.

Finally, the standard differs from those described above in its wide scope, the extent of specific items addressed and its complexity. It is then potentially more challenging for farmers than some alternatives.

Table 5: The Broad Scope of the Standard

1 Social Development 1.1 Development Potential and Capacity Building 1.2 Freedom from Discrimination 1.3 Freedom of Labour 1.4 Freedom of Association and Collective Bargaining 1.5 Conditions of Employment 1.6 Occupational Health and Safety
2 Economic Development The nature & workings of the Fairtrade Premium & the Joint Body
3 Environmental Development 3.1 Impact Assessment, Planning and Monitoring 3.2 Agrochemicals 3.3 Waste 3.4 Soil and Water 3.5 Fire
3.6 Genetically Modified Organisms (GMO)

There is no Fairtrade tilapia standard – or indeed any Fairtrade seafood standard of any sort as yet. So the generic standard is reviewed here. This is essentially a crop standard as it has been coffee, bananas and cocoa which have dominated Fairtrade’s development. The standard is structured as a series of **minimum requirements** which are backed up by subsequent **progress requirements** in most areas where the minimum is not an absolute (e.g. such as a ban on child labour). The summarised version of the standard set out below addresses the minimum requirements only, as this provides an initial overview of the standard in a manner that can be assimilated.

Summary of the Fairtrade Standard for Hired Labour

Web routing www.fairtrade.net/standards (see top bar)>Generic standard>generic producer standards (vs trader standards)>standards for hired labour (vs small or contact producers)

1 Social Development 1.1 Development Potential and Capacity Building <i>Social welfare and empowerment of worker promoted by the company</i>
--

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- Corporate social responsibility is an integral part of company policy, with a dedicated executive
- Fairtrade revenues (exclusive from the premium) used for social and economic development of the workforce
- Management support adoption of the Fairtrade ethos throughout the workforce, with a management-workforce 'Joint Body' (JB) as a key facilitator and adequate time and facilities dedicated to this process

1.2 Freedom from Discrimination

No discrimination on the basis of race, colour, sex, religion, political opinion, national extraction or social origin. (ILO Convention 111)

- No discrimination regarding any operational or fair-trade activity on the farm
- Management allows no physical or mental abuse of workers, including sexually abuse
- No disciplinary or discriminatory action against workers for using any grievance procedure.

1.3 Freedom of Labour

Ban on child labour or forced and bonded (debt-related) labour (ILO Conventions 29, 105, 138 and 182)

- No forced labour (including bonded or involuntary prison labour)
- No child labour or employment that jeopardizes education or physical development of the young, with the minimum age of 18 for riskier work
- Employment is not conditional on the employment of a spouse who has the right to work elsewhere.

1.4 Freedom of Association and Collective Bargaining

Rights of workers' representatives regarding freedom of association and collective bargaining (ILO Conventions 87 and 98)

- Workers have rights to establish or join workers' organizations and collectively negotiate their working conditions, and to deal with external unions without interference
- In the absence of a recognized union, all workers can democratically elect a representative workers' committee against which management can neither discriminate, nor interfere with workers choices
- Management allows freedom of association for workers, with no constraints on access to workers representatives, including regular meetings between representative and with management to foster collective bargaining.

1.5 Conditions of Employment

Payment of wages in line with or exceeding national laws and agreements on minimum wage (ILO Conventions 100, 110 & 111)

- Conditions of employment and salaries are in line with or exceed sector Collective Bargaining Agreement (CBA) regulations or regional norms, with regular work involving permanent employment
- Workers have legal written contracts specifying responsibilities, remuneration and terms, and understand these
- Terms include sick leave, at least 2 weeks paid annual leave, paid maternity leave (8 weeks), free weekends, workers discretion regarding overtime, legal weekly working hours (maximum 48 hours) and legal social security provision
- Payments made on time, in legal tender, without illegal or un-negotiated deductions and documented.

1.6 Occupational Health and Safety

Prevention of accidents and injury to health related to work, by minimising hazards inherent in the working environment. (ILO Convention 155)

- A Health and Safety (H&S) policy in place to cover all key risk areas, with a H&S Officer appointed to take responsibility for this, together with an identified Medical Officer
- Workers and their representatives trained in basic H&S requirements and first aid, especially for vulnerable workers operating in high risk/hazardous areas.
- The company provides adequate emergency first aid facilities, equipment and trained first aid staff and assures access to appropriate secondary healthcare.
- Provision of potable water, hygienic facilities, necessary working clothes, safe workplaces with adequate lighting, heating and ventilation, fire equipment (fire exits, alarms and equipment) safe electrical equipment
- Young (under 18), pregnant and incapacitated workers are protected from hazardous work
- Workers handling hazardous chemicals (including spraying) are adequately equipped & protected, and regularly examined medically, whilst chemical, physical, and biological substances are stored and controlled to minimise health risks.

2 Economic Development

Central to the Fairtrade approach is the “premium” which is aid by the trading intermediaries for use of the Fairtrade label (along with a separate license fee paid to Fairtrade itself. This premium becomes a development fund to enhance workforce benefits. This section is primarily concerned with the proper administration and use of this fund.

- The Joint Body (JB), with worker & management representatives is set out and able to administer the Fairtrade Premium (FP) with a legal entity which represents the workforce established to secure FP assets. The JB makes decisions after consulting the workforce, & has equal management & worker representation, with a workers veto and consensual stance
- The JB should be freely elected and represent the composition of the workforce to which it should be accountable regarding managing the premium. It should fully involve management in administering the Premium, based on an annual workplan & full documentation of actions
- The Premium may not be used for (i) normal company expenditure, (ii) Fairtrade or other standard compliance costs, (iii) direct payments to workers in normal circumstances, (iv) illegal activities or those that jeopardize the farm (v) anything not democratically agreed by the JB.
- The Premium accounts are managed through a separate bank account, with joint JB signatories, and accountability to Fairtrade and Joint Body members.
- There should be relevant training of workers' JB representatives

3 Environmental Development

Environmental protection with a social component is required, based upon environmental assessment and planning, minimising the use of agrochemicals and ensuring that essential use is safe and has minimum impact. Responsible use of energy and other resources is required.

3.1 Impact Assessment, Planning and Monitoring

Environmental impact assessment, mitigation plans and monitoring the effect of those plans.

- Mitigation plan including risk assessment to ensure environmental standards developed and fully implemented within one year of Fairtrade certification
- No biological (plant) material is taken from protected areas in contravention of national and international regulations, and there is no new activity in virgin forest areas.
- Records maintained on land usage, (crop rotation) and agrochemical usage.

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Substantial progress requirement including biodiversity risk assessment, buffer zones, current and future land use, management of water and energy use and participation in broader local community based environmental initiatives.

3.2 Agrochemicals

Maximum possible reduction in use of agrochemicals including pesticides, fertilizer, detergents and mineral oil products. Antibiotics will presumably be included for aquaculture.

- No listed FLO Prohibited materials List are used or handled by the company other than usage specified in the FLO Prohibited Materials List, and subject to FLO mandated conditions. An substitution plan must be developed and operated, and evidence of need demonstrated
- The build-up of resistance to agrochemicals (antibiotics for seafood presumably) is avoided through appropriate practices, usage scheduled to minimise human or animal exposure and environmental harm (aerial spraying is identified as a specific risk area).
- Agrochemicals are used, handled and stored so as to best protect the environment and people with users trained properly and use limited to that legal in the company's country.
- Pesticide use is flagged up, products labelled, anti-spill measures are in place especially in working areas and safe storage and disposal practices maintained
- A written record of all agrochemicals purchased, used and disposed of maintained

3.3 Waste

Companies are expected to reduce, reuse, recycle and compost waste.

- Waste disposed of in a safe manner and unused agrochemicals returned to the supplier when possible.
- organic waste is used in a sustainable way where possible

3.4 Soil and Water

The fertility and structure of soil is maintained and water resources are managed with the objectives of conservation and non-contamination.

- Best practice adopted to minimise soil erosion due to wind, water, and/or human or animal impact, and to enhance fertility and soil structure.
- Waste water so as to minimise negative impacts on water quality, soil condition or food safety.
- Waste water discharged farms does not pollute human or animal drinking water or contaminate soil or crops with chemicals or with excessive nutrients or pathogenic microbes.

3.5 Fire

Companies are expected to prevent the use of fire in ways that adversely affect natural systems.

Progress Requirements only, targeted on minimising use of fire to clear land, using trained workers and adopting appropriate safety procedures

3.6 Genetically Modified Organisms (GMO)

Companies do not use GMOs in either the production or processing of products.

Progress Requirements involve monitoring GMO usage in the locale and tracing inputs, processing aids and ingredients back one step in the biological chain to ensure that they are free of GMO content.

Fairtrade focuses upon people first and then other issues secondarily, seeing these through a human perspective. The analysis in table 6 below bears this out, showing how social considerations dominate the weighting of the Fairtrade criteria (nearly 60%). The

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focus on economic development is also evident at 16% - a category largely absent from the other schemes covered here.

Table 6: Indicative weighting of main themes: Fairtrade

Standard Theme	Scoring
Social conditions	58%
Environmental impact	24%
Economic development	16%
Other (GMO/fire)	2%
Total	100%

Audit Costs: Audit fees vary depending upon the time required but an indicative value is €3-5,000 exclusive of transport and subsistence. Initial audits can cost double this (if a pre-audit is required) but where local staff are in place, costs can be held down.

4.4 GlobalGAP Tilapia standard

The GlobalGAP family of standards managed by Food-Plus GmbH are advanced and comprehensive farm-gate standards which cover a very wide range of food products. GlobalGAP traces its origins back to 1996 when British and Dutch retailers met to discuss the need for a single standard for fruit and vegetable production. In its current form GlobalGAP is controlled by 39 retailer members from the EU, Japan and USA. There are more than 100,000 GlobalGAP certified producers operating in 85 countries. GlobalGAP has strong retailer support and is becoming an important standard for primary production of tropical shrimp. GlobalGAP has advantages over the GAA BAP in having options for group certification aimed at supporting small-scale growers. There is also a smallholder taskforce charged with looking at difficulties faced by small-scale producers in meeting GlobalGAP requirements.

Table 7: The Broad Scope of the Standard

1 Site management	
2 Chemicals	
3 Pest Control	
4 Occupational Health and Safety	
5 Fish Welfare, Management and Husbandry	
6 Aquaculture feed	
7 environmental and biodiversity management	
8 water usage and disposal	
9 cage production	
10 sampling and testing	
The GRASP Social module	

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The GlobalGAP tilapia standard comes as series of modules: (i) a **basic aquaculture** (coded AB) package (the “aquaculture base”), (ii) a specific **tilapia module** (TA) which adapts some of the general terms to tilapia culture specifics and finally (iii) a **social module** called GRASP which adds key social requirements as a pack applicable to their standards generally. The aquaculture base standard grew out of a salmon standard and subsequently a shrimp standard, and this genesis is to a degree evident in its current make up.

GlobalGAP differs from most of the preceding schemes in at least two ways. Firstly it is the most onerous of the schemes covered here – with three separate sets of criteria to be met (see above) just two of which generate 159 criteria, 60% more than FLO and more than double that for GAA or WWF. Secondly it is less clearly themed, with the various criteria groups each covering a mix of ethical and food safety aspects, as table 7 shows.

Like GAA ACC, GlobalGAP prioritises its criteria, distinguishing between key (“major musts”) and less important requirements (“minor musts” or “recommended”). The summary below highlights the critical major musts by underlining them.

Basic aquaculture module (AB)

1 Site management

Management and Documentation

- Quality manual available & applied re food safety, legality & quality
- Company organization structure that defines roles, responsibilities & reporting lines in place
- Internal audit routine (at least annual reporting) maintained
- Emergency plan for threats to health, food safety or animal health available
- risk assessment for animal welfare undertaken
- No GMO fish (aquatic organisms?) farmed

Site Management

- Risk assessment re water quality threatening food safety of animal health
- Farms well designed and maintained
- No toxic chemicals in contact with farmed fish
- Erosion prevention and flood mitigation measures taken
- Inlet water not contaminated by outlet effluent water & effluent not allowed to stagnate
- Vegetative buffer zones & wildlife corridors maintained, & biodiversity fostered by farm design
- Quarantine facilities in place to cope with disease emergencies
- Waste management system maintained coupled with pond dry-out/rehabilitation protocols

Site Entry

- Unauthorised entry restricted by barriers, well signposted & backed up by staff running orders
- Hand washing hygiene devices installed at critical food safety/animal health hazard points
- Written instructions on hand washing hygiene placed in prominent strategic locations

2 Chemicals

Chemical storage

- Chemical stored safely in secure location and as per legislation applicable

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- Information on emergency responses to chemical hazard & respective facilities
- Access to hazardous chemicals limited to those trained to do so
- Accident procedure developed and available
- Chemicals stored in their original containers, fully legibly labelled
- Chemical store well designed with spillage containment & separate mixing/measuring area & emergency facilities to deal with operator contamination, with powders stored above liquids
- Fully comprehensive chemical inventory maintained and readily available
- Chemical safety data sheets available for all compounds used

Empty containers

- Empty chemical containers not reused & disposed of safely with minimal exposure to people
- Official chemical container disposal systems used & containers kept secure before collection
- Local regulations on chemical container disposal observed
- obsolete chemicals disposed of through certified qualified contractors

Transport

- Hazardous chemicals checked before transport
- These chemicals not moved alongside people, animals feed or food products

3 Pest Control

- Pests controlled within farm facilities when appropriate, detailed records kept and measures taken to minimise invasion at entry points

4 Occupational Health and Safety

Training

- Chemical usage managers appropriately trained
- The HACCP hygiene standard and related systems built into training

Health and Safety

- Hygienic toilet and eating facilities and potable water for the workforce
- Diving operations reflect local safety legislation
- Health and safety guides provided for employees
- Workforce aware of emergency procedures for countering major threats

Legislative framework

- Farm obeys all applicable legislation including required registration
- Management understands relevant food safety, animal welfare and environmental Legislation

5 Fish Welfare, Management and Husbandry

Sourcing, Identification and Traceability

- All products traceable downstream and egg/fingerling inputs traceable upstream
- All fish movements between sites recorded & batches demonstrably traceable at all stages
- All eggs and juveniles certified disease free as required legislatively
- Newly audited farms have majority of growth cycle post-audit period (so covered by standard)
- Subsequent production

- Stocking densities held below levels prohibited by legislation or other standards
- Water quality monitored in relation to fish health/welfare & min. stress fish handling applied

Medicines

- Only approved medicines used and their use recorded
- Compliance with Maximum Residue Limits (MRL's) in target markets for farmed products
- Neither hormones or antibiotics used as growth promoters
- independent, ISO 17025 accredited, laboratory regularly sample-tests for use of key substances
- Out of date medicines and their containers disposed of safely with no risk of re-use

Medicine records

- Full records of medicine purchase & usage (product, quantities, dates, withdrawal period etc)
- Treated fish area clearly identified and records of this treatment notification maintained

Vaccination Procedures and Treatments

- Vaccination system designed to minimise stress & company procedure devised & followed
- Only approved vaccines used and properly trained staff used to apply them

Mortality

- Action plan formulated for dealing with large scale mortalities inc reporting to the authorities
- Daily mortalities monitoring & recording (inc cause) removal and safe disposal

Fish Holding Area

- Fish holding areas hygienic and nets inspected & integrity maintained to prevent escape
- Appropriate mesh size used to prevent gilling fish

Fasting, Harvesting and Transport

- Fish fasted prior to slaughter, for period set by authorities or customers if so specified
- Harvesting undertaken so as not to compromise food safety

Machinery and Equipment

- Equipment systems minimize harm to fish or risk of escape to the environment
- Records kept of equipments maintenance, calibration and cleansing
- All fish & feed transport equipment (inc vehicles or boats) regularly inspected for hygiene
- Alarms and oxygenation systems
- Water inflows and outflows screens inspected daily and cleaned when necessary
- Equipment durable, purpose built, with oxygenation systems
- Separation or disinfection of workers, vehicles and equipment moving between sites/farms

6 Aquaculture feed

General

- Suitable diets used for species farmed, feed/feed inputs from a GlobalGAP approved supplier

Feed records

- Feed batches traceable from manufacturer to fish batch produced
- Feed purchase invoices kept for 3 years, and state feed type, quantity, source & date of delivery
- Feed suppliers supply deceleration of constituents of feeds/supplements, kept for 3 years
- List kept of antibiotics, pigments, antioxidants, immune stimulants, probiotics and other additives in feed

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- All feed used consumed before shelf life expires, regular testing on contaminants done & reported by the feed supplier

Storage of Aquaculture Feeds

- Feed stored using best practice to prevent contamination, with medicated & flush feed stored separately

7 Environmental and biodiversity management

Environmental Management

- Farm has formal documented environmental & biodiversity policy & monitors compliance
- Continuously updated environmental & biodiversity impact assessment (EIA) & risk assessment (ERA)
- Environmental & Biodiversity Management Plan (EMP) devised, based on the EIA & ERA to reduce threats to the environment & demonstrate suitability of site
- Environment Contingency Plan in place to deal with identified threats to the environment
- Only approved anti-fouling agents used with appropriate discharge consents
- EMP includes measure to monitor & prevent salinization, and notify authorities if it occurs

Energy efficiency

- Energy efficiency policy in place covering farm design, maintenance and use of fuel & power

Wastes

- Human waste treated properly and not discharged untreated

Nitrate and Phosphate Levels in Drain Water

- local discharge limits in accordance with national and international legislation and enforced
- organic waste stored in an appropriate manner to reduce the risk of contamination of the environment

Predator control

- Control through scaring rather than destruction, and the latter only when legislation allows

Escapes and Non-Indigenous Species

- Standard operating procedure in the ERA/EMP for prevention of escapes

8 Water usage and disposal

General

- Water abstraction and discharge rates are within limits set by the authorities
- If legally required, are there a definitive “environmental assimilative capacity” parameters
- EIA/EMP covers monitoring of inflow and discharge water quality, & suspended solids in discharged water
- Collected solid waste (sludge) disposed of in an appropriate and legal manner
- Sediment samples where water discharged/below cages to test for micro fauna
- No use of fresh groundwater to lower pond salinity & minimized use of water encouraged
- Farm discharge water impact on biodiversity monitored & minimized as part of EMP

Supply / Quality of Ice

- All ice that contacts fish product uses potable water, is handled hygienically and not contaminated, with all additives to this source water for ice of human food grade

9 Cage production

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- Cage net bottom never touches substrate below the cage

10 sampling and testing

- Sampling program based on likely contaminants as determined by Veterinary Health Plan (VHP)
- Duplicate samples always taken, accurately labeled and held for independent analysis
- Laboratory used for testing is accredited to ISO 17025 or equivalent standard, and laboratory test results traceable to the specific batch

The GRASP Social module

- at least one employee representing the interests of the staff to the management
- a complaint procedure available to – and known of by - employees on the farm
- Good social practice declaration (inc. human rights, & based on the relevant ILO Conventions) agreed by management & workers representative and understood by workforce.
- Workers representatives (inv health & safety) aware of current national labour regulations
- Workers have (and can inspect) signed, written contracts giving terms of employment
- Documented evidence of regular payment of salaries as stated in the contract
- Payslips show salaries comply with legal regulations (e.g. minima) and/or negotiated terms
- Evidence that there is no child labour (minors, under 15) employed on the farm
- children of employees living on-farm have access to compulsory school education
- Employees working time and overtime recorded and shown clearly on daily basis
- Working hours and allowable breaks comply with legislation and/or negotiated terms
- For producer groups only – their Quality Management System must show GRASP implemented by all group members

This is already an elaborate and onerous scheme. In addition there is a Tilapia Module which covers much of the same ground but with a specific tilapia focus. This has an additional 37 criteria (32 of which are rated as critical).

Table 8: Indicative weighting of main themes: GlobalGAP

Standard Theme	Scoring
Social conditions	17%
Environmental impact	34%
Economic development	4%
Other (mostly animal welfare, some GMO)	8%
Hygiene, sanitary & quality	37%
Total	100%

Audit Costs: As with all the other examples discussed, audit fees vary depending upon the time required, and the availability of locally based qualified auditors (who may have lower fees and use of whom will certainly avoid international travel and accommodation costs). Assuming that such capacities are still to be developed in CAPA member countries, the indicative cost of a GlobalGAP fish farm audit are \$5,000-\$10,000 for fees plus travel costs for a 5-10 day field visit – say \$2,500-\$5,000 per head per visit, or \$5-\$10,000 for a typical two person team. Such audits are required on an annual basis, though presumably the level of work required reduces after the initial audit.

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4.5 Making the Choice

Primary objectives of this manual are to help farmers (i) understand what is entailed in ethical labelling and so help them make the decision as to whether to proceed or not. Then, if the initial decision is positive, (ii) to provide some guidance as to which scheme suits them best. The implications of each scheme are summarised above, and the purpose of this section is to follow these summaries with a brief comparative analysis. This is done through a series of tables, set out below.

A few points need to be made at the outset though. First, as mentioned above, the choice of scheme will in fact often be determined by the market itself – i.e. if a farmer wishes to sell to a customer, that customer will specify which scheme they require. Therefore, the choice may be customer-driven, and the ability/wish to meet a given standard may actually be the determinant of which customer/market a farmer should opt for.

This raises a second issue, one that is obviously central to the motive for ethical labelling, and that is - what will it achieve for the farmer? This is discussed in detail below, but is essentially simple – ethical labelling can either (i) allow access to certain markets/customers or (ii) generate a price premium over an uncertified alternative product that is otherwise identical. Ideally, certification can achieve both access and premium. The economics section below looks at the quantitative implications, but the analysis in this section rationalises the respective demands that the various schemes put upon farmers. Table 9 starts this by comparing the thematic weighting of the four schemes criteria (and again the crude nature of the comparison should be stressed – this is a simplistic comparison, but helpful for all that).

Table 9: Indicative weighting of main themes: Comparison of criteria

Standard Theme	GAA ACC	WWF ISRTA	FLO Fairtrade	GlobalGAP (Eurepgap)
Social conditions	19%	36%	58%	17%
Environmental impact	51%	62%	24%	34%
Economic development	0%	0%	16%	4%
Other - animal welfare, GMO	6%	2%	2%	8%
Food safety, hygiene & quality	24%	0%	0%	37%
Total	100%	100%	100%	100%

The bias of the schemes is clear in this table. The GAA and WWF schemes favour the environmental theme whilst FLO is of course dominated by social issues. GlobalGAP covers a broad spectrum, but the importance of food safety is evident - as would be expected for a standard that grew out traders' concerns about this issue. However perhaps the broadest and most balanced standard is GAA, especially given the degree to which consumer concerns about aquaculture have tended to focus on the

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environmental and sustainability themes (as oppose to developing country manufacturing where social aspects tend to dominate – e.g. child labour).

Table 10: The auditing implications for the various schemes

Scheme	Primary criteria	Secondary criteria	Total criteria	Relative complexity of audit
GAA ACC	40	38	78	45%
WWF ISRTA	61		61	47%
FLO Fairtrade	97		97	74%
GlobalGAP	103	56	159	100%

* relative to GlobalGAP, assuming secondary criteria are only 50% as demanding as their primary equivalents

Table 10 looks at another critical aspect of the various schemes – how onerous they are likely to be from both an audit and implementation perspective. Again this is a crude and simplistic measure which assumes all primary criteria are equally time-consuming and costly to audit. This is patently not the case – but again this analysis does provide some indicative quantification of the scope of the required audits. What it cannot provide is an indication of the costs of implementing the required changes – which obviously can vary enormously – but it perhaps does point to which schemes are likely to be more demanding in this regard.

Finally, the point should be made that where the scheme includes a number of food safety criteria, these will be mostly also covered by the basic SPS requirements to export to an OECD market (e.g. the EU). Arguably these criteria should then be discounted as the farmer will have had to complete these as a basic prerequisite for exporting. This affects the GAA and GlobalGAP schemes, and suggests that now (i) FLO is the most onerous scheme to audit whilst (ii) from ease of auditing viewpoint, GAA ACC is the best option (45% of FLO criteria).

Independent comparatives studies

Some formal comparative studies of the major certification schemes have been undertaken. A case in point is the WWF’s “Benchmarking Study: Certification Programmes for Aquaculture Environmental Impacts, Social Issues and Animal Welfare” of late 2007. This however looks at aspects rather different to those discussed above. The key issues assessed are (i) how effectively the scheme’s criteria address the issues involved and (ii) how robust are their compliance mechanisms and systems for ensuring the integrity of the scheme. They are then arguably of more value to the end-users in judging the schemes merits in relation to their ethical concerns. Also the study covers only two of the schemes featured here: GAA and GlobalGAP.

However a much summarized version of the study’s results is shown in table 11 below as an indicator of this alternative view of the standards. Each certification scheme is given a relative score for its performance in each theme. A new scheme is mentioned in this table - Friend of the Sea (FOS). This was not dealt with here as it is perceived to

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have limited traction in the EU market place, perhaps explained by its relatively lower scores than GAA or GlobalGAP.

Table 11: WWF benchmarking assessment of Certification schemes

Theme Scheme	Environment	Social	Animal welfare	System robustness	Average
GAA ACC	46%	56%	56%	51%	52%
FOS	49%	11%	22%	65%	37%
GlobalGAP	30%	22%	89%	78%	55%

Source: WWF's "Benchmarking Study: Certification Programmes for Aquaculture Environmental Impacts, Social Issues and Animal Welfare" 2007

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5 Economic implications

5.1 The Certification Process

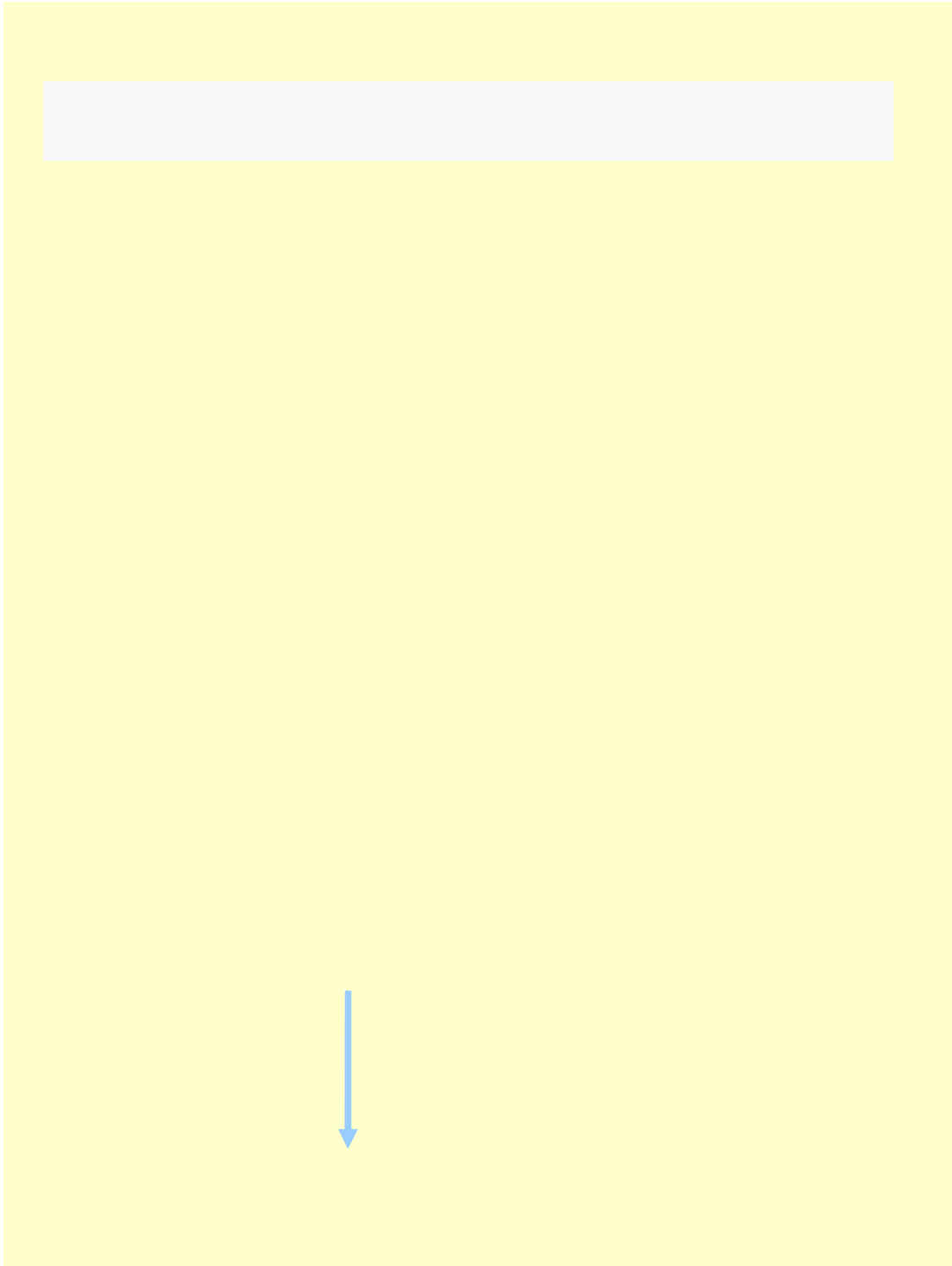
The previous sections discuss the broad requirements for certification and the relative merits of the schemes available. But what does certification actually mean for a farmer in practical terms? What physical stages does he or she have to go through to achieve certification? These are critical questions, and this section accordingly looks at the practical aspects of certification from the farmer's perspective. The process is seen as a series of stages each of which leads logically on to the next. These are set out in figure 8 which distinguishes between those stages that are expensive (in terms of time, demands placed on management attention and cash) and those that are less so. The former are flagged in red.

It has to be accepted that not all certification initiatives are successful or are followed through with. What matters then is that expenditure is held to a minimum before it is clear that certification is possible, affordable and desirable. The schedule in figure 8 has been devised accordingly with the red-flagged (expensive) stages mostly deferred toward the end of the certification process.

The process is seen as a form of critical path with a number of points where the decision to abandon the process can be made (or imposed by the certifying body). These can be seen as a number of hurdles the farm has to overcome to achieve certification – i.e. the critical points at which the process could fail.

The actual audit process depends upon verification of compliance, this being based upon formal documentation or visual/physical inspection depending upon the criterion concerned. Documentation is particularly important for most audit systems and having good records greatly assists the process. This means that records must be comprehensive, detailed, up to date, well ordered and accessible as well as having no significant gaps.

Audits are carried by trained individuals usually hired or employed by an independent certifying company accredited to the certification scheme. Increasingly these experts are locally based, which of course greatly reduces costs as their fee rates tend to be lower and expensive travel is avoided. Locally based auditors have the additional advantage of being more available for advice during the process and more flexible regarding timing and site visiting.



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5.2 The EU Export Market

This is a manual primarily concerned with the ethical labelling of seafood products, but wider market issues have an obvious relevance. They determine whether exporting is a viable option for African fish farmers, an issue that is obviously fundamental to any decision regarding certification.

The current market for African farmed freshwater fish

African exports of farmed tilapia to the EU or any other OECD markets are minimal currently. There are a number of reasons for this – listed below – but the purpose of this manual is to look to a future where exporting farmed fish becomes a viable and possibly essential option for CAPA members.

There are some signs that change is in the offing. Nile perch catches are declining and panga is under continual threat – not least from intense lobbying by EU and US competing fishermen and fish farmers. And such is the intensity of pangasius production technology that a future collapse is unquestionably a possibility. Scope for future development of a fresh tilapia niche in the EU market cannot then be denied and this prospect underpins the main thrust for this manual. However, understanding the challenges that tilapia faces currently provides a good basis for judging when an export strategy would be appropriate.

- The only area where Africa can compete is in the fresh fillet market because Chinese and South East Asian prices for frozen tilapia are so low that their market is unassailable by African producers.
- Pangasius (Vietnamese catfish or panga) is being imported at prices below €3/kg (for C&F frozen fillet) so denying any prospect for African tilapia farmers being able to exploit the bottom end of the market.
- This means the only option is air flown fresh African tilapia fillet and this in turn means high prices of €7-8/kg C&F EU for fresh African tilapia fillet.
- However tilapia is a midrange species quality-wise, unable to compete with prime species such as high grade flatfish, and so cannot command the high prices associated with these top-end species.
- Tilapia then has to compete with mid range alternatives like cod which are available for €5-6/kg for fresh fillet C&F EU. Tilapia consequently appears to be overpriced. Nile perch, another competitor product which is the basis for an established Africa-EU trade also arrives at €5-€6/kg fresh fillet in the EU, confirming this as the “going rate” for mid range fresh whitefish fillet in this market.

- An additional threat is posed by sale of thawed Chinese frozen fillets. Sold as fresh (labelled “defrosted” by law, often CO treated to improve colour), these are much cheaper at €4/kg after repacking in the EU.
- Tilapia also suffers from some other disadvantages:
 - Occasionally off-favours - a risk factor that puts some buyers off
 - The skinned fillets are less attractive in appearance than the very white cod or pangasius fillets. Tilapia has red subcutaneous meat which if untreated turns brown
 - Tilapia is also unknown to most EU consumers
 - Tilapia fillets tend to be sub-optimal in size, i.e. below 150gm (a size that implies whole tilapia of 900 gm (at 33% fillet yield), larger than most farms normally produce
- There are also positives though. Tilapia has succeeded impressively in the USA and has made inroads into the Dutch market where demand is growing.

In conclusion, most EU traders currently see very little incentive to take on the effort and expense of developing the market for fresh African tilapia. At €7-8/kg fresh fillet C&F EU it is simply overpriced in relation to its main competitors. What would change this would be a significant reduction in price. On current evidence this would create significant demand. As such it is an economic issue and so is dealt with in the next section.

EU Import Duties

ACP countries (which include CAPA member countries) benefit from the derogation (removal) of duties normally charged on imports from EU trading partners. This obviously confers a competitive advantage for the preferred exporting countries. The duties in question are 8-9%. These tariffs then provide some protection for CAPA members from highly competitive producers and thus increase their trading prospects.

Table 12: EU Duties on Freshwater fish product imports to the EU

Item	HS/CN Code	Conventional Duty %
0302 Fresh whole fish		
Fresh tilapia	0302 6915	8%
Fresh freshwater fish (nei)	0302 6918	8%
0303 Frozen whole fish		
Frozen freshwater fish (nei)	0303 7919	8%
0304 Frozen fillet		
Fresh & frozen panga & tilapia fillets	0304 1903, 2903-5	9%
Fresh & frozen freshwater fish fillets (nei)	0304 1918, 2918	9%

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However, some of CAPA's main competitors are also excused these duties, although not to the same extent. China, Vietnam, Indonesia and Thailand are classified under the GSP (General Systems of Preferences) as favoured nations. This allows a derogation of duty of 3.5%, i.e. the net duties that these key competitors face is 4.5% and 5.5% for whole fish and fillets respectively. Given these countries very low production costs, this actually provides rather limited protection then.

Food Safety and Hygiene

There area a number of regulatory systems that are, to varying degrees, important for those exporting seafood to the EU. These involve what are in effect non-tariff barriers (NTBs) to trade, and so restrict trading. Some are critical, others less so, but by far the most important is the SPS regulation covering food safety and hygiene. This is particularly important because it is of course a crucial prerequisite for exporting to the EU (or any OECD market). This aspect has also recurred frequently in the certification criteria described above – indeed it is an integral part of many ethical standards. The official EU response to food safety is accordingly briefly described above (section 2.3).

This national system has to be authorised by the EU to certify their national processing facilities (land and sea based, including on fishing vessels) as fit to export to the EU. It represented a change in approach by the EU, moving away from physically checking imports batch by batch on arrival in the EU, i.e. a “process” approach has been adopted, which focuses on the systems rather than the products. Also the onus of responsibility has been passed from the EU recipient states to the third country exporting states. This is obviously a non negotiable imperative that will, and should be, maintained by the EU.

5.3 Costs & Benefits

The current economic context

Currently African farmed tilapia requires too high a price to encourage sales in the EU – i.e. €7-8/kg C&F EU for fresh fillet. This price does appear to reflect the economics of the trade though as table 13 shows. Working backwards, the implied initial raw material cost of \$2.7/kg does equate to first sale prices seen in Southern and East Africa as well as Ghana. The current EU prices do then represent the underlying cost base and helps to explain why African farmers favour local or regional sales over export to the EU.

Table 13: The Value Chain for Exported African Fresh Tilapia Fillet

Price point	€/kg	\$/kg
Whole raw material	€ 1.9	\$2.7
Fillet cost (33% yield)	€ 5.9	\$8.1
Processing costs (filleting/skinning)	€ 0.1	\$0.1
Fillet cost	€ 6.0	\$8.2
Delivery to airport & packaging	€ 0.2	\$0.2

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FOB Africa	€ 6.1	\$8.4
Airfreight	€ 1.2	\$1.6
Port clearing costs, EU airport	€ 0.2	\$0.3
EU price cleared at airport	€ 7.5	\$10.3

This is the situation now, but history tells us this can change radically and rapidly in Africa. There is then justification for the considering the OECD export option for CAPA members in the future. The ready availability of hard currency cannot be guaranteed, and key inputs (e.g. feed) could similarly become more difficult to source. Changes in the EU marketplace (availability of pangas or coldwater marine whitefish, exchange rate fluctuations etc) could also have a radical impact upon the viability of African fish exports.

Furthermore, it does now seem that a considerable expansion of aquaculture could be underway, and that this could be sufficient to more than satisfy domestic/local demand, at least at current price levels. This expansion should also lead to the benefits of scale, and so bring production costs down closer to Asian levels. Table 14 suggests that were farm gate sale prices (i.e. including the farmer's profit margin) to be reduced to \$2/kg, then a delivered EU price of €6/kg could be achievable. This would put tilapia in contention with much of EU fresh marine white fish fillet and thus open up a much wider market segment.

Table 14: A theoretical Value Chain for Fresh Tilapia Fillet

Price point	€/kg	\$/kg
Whole raw material	€ 1.5	\$2.0
Fillet cost (33% yield)	€ 4.4	\$6.0
Processing costs (filleting/skinning)	€ 0.1	\$0.1
Fillet cost	€ 4.5	\$6.2
Delivery to airport & packaging	€ 0.2	\$0.2
FOB Africa	€ 4.6	\$6.4
Airfreight	€ 1.2	\$1.6
Port clearing costs, EU airport	€ 0.2	\$0.3
EU price cleared at airport	€ 6.0	\$8.2

In this situation – i.e. resumption of viable exports to the EU - the next question is whether certification can provide additional economic benefit. Labelling, and the distinction it endows upon a product, can achieve two things for a producer: It can allow the producer to obtain a **price premium** for the product or it can **widen its market access** to include outlets that require the label in question. Ideally, labelling can do both. The key issues are then:

- (i) Is ethical labelling an issue in the specialised EU market niche that African farmed tilapia can exploit – that for fresh fillet?
- (ii) If so, which labels are most desirable?

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- (iii) And what benefit does the label achieve for producers: a premium, market access or both?

The consensus of market opinion is that ethical labelling buys market access and only market access. Some major retailers demand such labelling for seafood and it consequently becomes mandatory if they are to buy the product. This passes back up through distributors, processors and importers and so comes to pervade the supply chain within the EU. If an African exporter wants to supply this segment of the market, then they have to become certified.

No premium is paid for the label, and it becomes a question of whether the access is worth the certification cost. This is in turn partly a question of scale, as table 15 shows. This assumes that the farm in question has to make minimal changes to its design or practices to qualify, and so the major cost is that of the audit (a major purpose of this manual is to help farmers ascertain whether they are likely to comply at manageable cost prior to undertaking the certification process). The examples given above in this manual suggest that the all-up costs for an audit (including expenses) lie between \$10,000 and \$20,000 per annual audit. \$15,000 is then assumed to be a representative cost. Clearly and unsurprisingly audit costs are highly volume dependent – at 15 US cents per kg they represent a substantial cost element for a 100 tonne/year farm (8% of total cost), but at 0.3 US cents/kg are marginal for a 5,000 tonne unit.

Table 15: Certification costs per unit output

Output (tonnes/year)	100	250	500	1,000	2,500	5,000
Cost/year \$US/kg	0.15	0.06	0.03	0.02	0.01	0.003
% of total cost (@\$2/kg)	8%	3%	2%	1%	0.3%	0.2%

Assuming production cost \$2/kg