

# The Role of Carbon Footprint Programme Operators for a Credible Communication: From the Italian Experience to the Carbon Footprint International Alliance

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**Abstract:** This work reviews the opportunities to make the communication of Carbon Footprint more effective, starting from the experience of CFI (Carbon Footprint Italy) and moving in the direction of CFIA (Carbon Footprint International Alliance). In view of the implementation of the ambitious policies set globally, requiring a quick and irreversible decarbonization of all the sectors, it is crucial to guarantee that transparent, reliable, and effective information is provided to the public. The analysis is built on CFI, the Italian initiative, and is focused on the global initiatives that are evolving worldwide. To ensure the best communication possible of carbon footprints all around the world, it becomes necessary for all the programmes to apply the same, credible rules and collaborate in view of a mutual, multilateral recognition. Built upon the experience of MLA (Multi-Lateral Agreements) among accreditation bodies, the CFIA aims at gathering the existing initiatives to create a strengthened international network to boost the global recognition of carbon footprints, thus facilitating the enhancement of virtuous companies in the global market.

**Key words:** Carbon footprint, climate, communication, sustainability, global market.

## List of Abbreviations

CFI	Carbon Footprint Italy
CFIA	Carbon Footprint International Alliance
CFO	Carbon Footprint of Organizations
CFP	Carbon Footprint of Products
dLUC	Direct land-use change
GHG	Greenhouse Gases
IAF	International Accreditation Forum
ISO	International Organization for Standardization
MLA	Multi-Lateral Agreement
MRA	Mutual Recognition Arrangement
PAS	Publicly Available Specification
PO	Programme Operator
QR	Quick Response
SME	Small and medium-sized enterprises

## 1. Introduction

Climate change is one of the most complex challenges that humankind has ever had to face. It is now evident how this challenge is becoming more and

more compelling, and how the efforts must be global, quick, and resolute. This is confirmed by the publication in 2021 of the contribution of Working Group I to the Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change, namely the Climate Change 2021: The Physical Science Basis, that thoroughly analyses the physical basis of the climate systems, provides evidence of how climate is changing and how this is strictly related with human activities. The even more recent contribution of Working Group III on Climate Change 2022: Mitigation of Climate Change, moreover, examines the sources of global emissions and explains developments in emission reduction and mitigation efforts, assessing the impact of national climate pledges in relation to long-term emissions goals.

The awareness of this urgency is not only widespread within the scientific community, but within all the sectors of our society. More and more ambitious policies are being adopted all over the world, regulating climate actions, setting ambitious

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targets, and boosting virtuous actions and market mechanisms.

This revolution is also occurring at a social and economic level. In fact, the market urges companies to embark serious actions towards sustainability, and massive investments to reduce their impact on climate change have been made.

In order to make such actions effective, it becomes necessary to support them with a reliable quantification, together with an efficient communication.

In this context it is crucial to ensure a quality infrastructure to avoid the so-called green washing, both for what concerns the technical aspects of the quantification and the communication. ISO standards provide a solid framework in this sense, defining detailed calculation methodologies and communication tools.

For what regards the latter, the framework provides for the creation of PO (Programme Operators), that allow the effective disclosure of carbon footprint results.

This work builds on the example of the Italian experience, CFI (Carbon Footprint Italy) [1], providing an overview of the innovative features that led it be the first initiative ensuring high level of guarantees and reliability on the market, due to its flexibility and its ability to follow the market needs.

On top of this, it explores the evolution of the international landscape, through the analysis of the existing network Carbon Footprint International [2] and the establishment of the ambitious CFIA (Carbon Footprint International Alliance). Through these initiatives, it fosters cooperation and thus consistency, with the aim of achieving mutual recognition between existing programmes.

## **2. The Evolution of the Surrounding Context**

In the past years, as the market started pushed companies to move towards more sustainable productive models, many companies already undertook measures in this direction, by using

innovative, efficient technologies and by adopting advanced environmental management systems. Nowadays, these efforts towards sustainability are becoming even more intense, and the pressing urgency of climate change has pushed companies to introduce specific tools for carbon management within their strategies.

Several voluntary methodologies for the quantification of GHG (Greenhouse Gas) emissions are already available on the market. ISO standards themselves represent the common foundation on which said methodologies are based, ensuring that they are consistent all over the world. Most of them are extremely reliable and internationally recognized, such as the quantification of CFP (Carbon Footprint of Products) in accordance with the ISO 14067 [3], or the GHG inventory of organizations in accordance with the ISO 14064-1 [4].

Nevertheless, it should be noticed that implementing technical improvements and adopting recognized carbon management strategies is not enough to ensure the massive market adoption of products with a low carbon footprint; another key element is the effective communication of the results achieved, combined with a close relationship between producers and consumers.

To achieve such a result, however, a company must deal with another thorny aspect. The communication of efforts is itself quite delicate: if one is to opt for self-declarations of the results achieved, these might be difficult to justify in a credible way to the market, even when based on trustworthy efforts. On the contrary, the risk is that of falling into so-called green washing, either consciously or not. At the same time, the same difficulties are faced by consumers or clients, to understand how serious the information communicated is, and thus to take informed decisions.

A solution to overcome said difficulties is the option of a recognized Programme<sup>1</sup> dedicated to the

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<sup>1</sup>Also known as Programme Operator, or PO.

serious communication of carbon footprints.

ISO standards also address the need for clarity in this sense through the definition of serious, reliable, transparent but simple and effective CFP programmes able to complement the technical and management efforts, from a communication point of view [5].

In the past few years several programme operators on carbon management have been launched, aiming at simplifying and regulating the complex communication framework characterizing the carbon management claims.

### *2.1 The Italian Case Study*

One of the essential features of a programme operator is its transparency, and it can be achieved only through its clear detailing: this refers both to the international existing documents that it adopts—such as ISO standards, GHG protocol, etc.—and to the additional rules that are specifically designed for the PO.

These requirements are illustrated in this section with the practical example of the Italian case study.

CFI is the Italian PO on carbon management. It has been developed in accordance with the standard ISO 14026 [6], which provides specific guidelines and requirements for footprint communications for products, specifically concerning the environmental field of action.

The goal of the Programme is to enable companies to communicate credible and reliable information on their GHG inventory and on the CFP, both to all actors along the value chain, and to final users and customers.

To participate in the Programme, companies must fulfill a set of requirements.

First, there is one concept that must be borne in mind: the first action that companies must take is a serious quantification of their impacts, following the requirements set out by international standards. To achieve the registration in CFI, the reference standards are the following:

- ISO 14067 for products (ISO, 2018)
- ISO 14064-1 for organizations (ISO, 2018)
- PAS 2060 for carbon neutrality statements [7]

Subsequently, organizations and products shall then receive a verification statement issued by an accredited independent third party.

The third-party verification represents a guarantee on the reliability of the values of CFP and of GHG inventory. Anyway, additional elements are needed to ensure an effective and transparent communication.

It is in fact crucial to disclose complete information. This is to be ensured considering that all the background information supporting the study cannot be directly depicted on the single labels that are printed on the products, because of space constraints and of clarity reasons.

That is why CFI uses a label combined to a unique QR code. Each QR code is associated to a single registration realized in the Programme and is linked to the dedicated webpage on the CFI website, specifically created for the specific product or organization.

The webpage reports all the useful background information that is relevant to be communicated, as indicated in the ISO 14026 (ISO, 2017). This information includes details on the organization, on the product under assessment and on the modelling choices adopted (such as the declared/functional unit, the system boundaries, the reference year, etc.), as well as the carbon footprint validated results. In case of products, the value of CFP is reported both as a comprehensive value, and as value split per type of emission, namely net fossil GHG emissions, biogenic GHG emissions, biogenic GHG removals, GHG from dLUC. In addition, the aircraft GHG emissions are also reported separately, as requested by the reference ISO 14067.

CFI also takes advantage from the introduction of best available technologies that provide a high-quality tracking of the reduction over time of the carbon emissions, namely block chain. This technology

allows actors to verify and audit transactions and track them in ledgers; once updated, the data cannot be deleted in any way, thus ensuring the reliability of the system and giving a new shape to the carbon management communication scenario. In this way, thanks to this technology, companies are made accountable for their CF claims through unmodifiable information reported in the Programme; consequently, it is also possible to control in a reliable way the evolution over time of the companies' GHG reduction pathways.

Another potential aspect of the use of the PO is the involvement of different actors along the same value chain. In fact, through the participation in the Programme, companies are facilitated to communicate and interact, empowering each other and creating virtuous circles. An example is provided by the leather sector, where both companies producing chemicals used for the treatment of leather, tanneries and producers of leather products are registered to the Programme, facilitating each other's calculations and ensuring transparency to the other steps of the value chain.

## *2.2 A Growing International Network*

The Italian case is only one of the many experiences that have been developed all over the world, to provide an answer to the growing need for a system of guarantee which can monitor and oversee carbon footprint values on the international market.

As stated above, companies that undertake studies of carbon footprint will eventually face the need to properly communicate their efforts and results. The need for an international communication, moreover, comes from an increasingly wider market, that is more and more developing globally. A company can therefore not only rely on a national label anymore but will find itself in need of a cross-border solution, recognized worldwide.

It is indeed crucial to consider that this type of communication is often addressed at a wide

geographical target, not being limited to the national boundaries.

Because of this, the interaction between national initiatives becomes a key aspect to ensure the scaling up of their reach, and nationally managed local initiatives started a path of collaboration that is quickly evolving towards a global movement.

The development of said international network also comes from a deep cooperation logic, where the critical aspects are mainly represented by a lack of harmonization between initiatives. If every country proceeds in developing their own experience without taking into consideration the wider framework, the result will be contrast and disunity between the programmes.

It shall hence be borne in mind that the application of international reference standards is not enough for the achievement of consistency on the quality of the registered contents, if each PO moves in different directions. On the contrary, a closer collaboration will allow enhancing best practices and better learning from different backgrounds.

Italy, on its part, has taken an active role in the promotion of the first informal network of programmes, and in 2018 Carbon Footprint International was created.

The primary purpose of the network is the establishment of a new space, a showcase that contains basic data and background information for each PO, with the ultimate goal of increasing mutual knowledge of the existing programmes at the international level, their organizational structures, and thus assisting the potential exchange of information. Currently, the network can count on 11 different POs from 4 continents, confirming the efforts to achieve a global coverage.

The main purpose is to create a solid structure allowing for closer connections between these initiatives, that can support each other facilitating and promoting the exchange of knowledge, lessons learnt, achievements and ideas, and giving further visibility to each PO.

After this first step, the awareness that more could be done started growing. The path has continued developing with the perspective of increasing the consistency among the subjects, with a new long-term ambition of having equivalent programmes in various countries. This new perspective is also in line with the recently published standard, ISO/TS 14029 [8], that aims to achieve a Mutual Recognition among Carbon Footprint POs, too.

The discussions and exchange of best practices confirmed the awareness of the potentialities of reinforcing the PO network.

Consequently, this new development path has seen the formalization of a first MoU (Memorandum of Understanding) between CFI and The Climate Registry (USA and Canada) in February 2021, and its extension to a group of exceptionally motivated POs that decided to move forward and to increase their ambitions.

The first step was the signing of the agreement during the COP26 in Glasgow. In this occasion, the MoU was signed between CFI, The Climate Registry, Toitū Enviro care (New Zealand), and Programa País Carbono Neutralidad (Costa Rica), marking the trail for an evolution of the initiative into a first alliance, and the creation of a new, more harmonized group.

Building on this, the CFIA was created in 2022. The goal is to work to enhance the consistency between Programmes, in order to be able to achieve, in the future, a mutual recognition.

This is built on the fact that the POs, as described for the CFI example, are based on the ISO standards, that are globally recognized. Making compatible the rules at the base of the POs will allow developing some shared strategies and structures for carbon footprint, irrespective of where the studies are performed.

Ensuring recognition between initiatives is becoming more and more important. In fact, many multinational companies work in several markets, and they already have the necessity to ensure that the

achievements communicated in one country are recognized all over the world.

The goal is to move towards a possible future evolution with consistent structure and the recognition of the single labels where a logo will be fully recognized in the associated markets. Therefore, for example, the dedicated page of a product can be assessed and fully recognized in the other markets.

### *2.3 The Example of the MLA (Multi-Lateral Agreement) among Accreditation Bodies*

A similar problem can also be observed in the accreditation field, where each country has one—and often more—accreditation bodies. In a global market, where goods and services need to move fast and freely between countries, it appears unthinkable that every country has different rules and control systems for third-party verification.

Because of this, regional associations—i.e., EA, the European Cooperation for Accreditation, or IPAC, the Pacific Countries one—have been created. Regional associations, then, take part in an international forum, IAF, developed precisely to establish common rules and monitor their application in the different geographical areas.

Through a mechanism of cross-peer evaluation, it is possible to confirm the consistent application of such a common approach, thus leading to the signature of an MLA in the accreditation field. This mechanism ensures that the verification statement issued to a SME of a small country shall be recognized in all major world markets. The path to developing and monitoring MLAs is complex, but the benefits to the market are significant. This type of model could represent an interesting starting point, to be developed in parallel in the world of POs for carbon management.

To that end, one should keep into consideration the newly published standard—ISO/TS 14029—for the establishment of MRA (Mutual Recognition Arrangements) precisely of footprint communication programme operators.

### **3. Conclusions**

The communication of climate data is becoming more and more important at the market level, and the topic of voluntary disclosure of the commitments made and of the results obtained is thus becoming crucial, and so is the need of responding to these needs.

The paper highlights the quick evolution that the carbon management sector is undergoing and the need for reliable and recognized tools for communicating voluntary efforts embarked by organizations. The ability to support climate claims in a credible way—in accordance with internationally recognized ISO standards—is, and will be even more in the future, a key factor for a successful transition towards decarbonization.

Many companies are in fact embarking on decarbonization pathways, by investing in innovative technologies, materials, engineering to develop products with a low carbon content. Accordingly, it is crucial for them to build their technical advancements on a reliable quantification of their emissions, together with an effective communication of the commitments and the results achieved.

For what regards regulated schemes, both mandatory and voluntary ones, these mechanisms are already in place; this trend is likely to be further developed in the next future, thanks to the delineation of increasingly ambitious climate goals.

A significant interest was in fact demonstrated by the market [9], where it is proved that choices of consumers and clients also depend on the level of engagement and credibility of the company which offers a product. This is creating a complex and rich framework, offering several possibilities and pathways to organizations willing to communicate their efforts.

Within this broad framework, there are however companies that decide to opt for self-declarations, that often do not refer to recognized schemes, thus intensifying the confusion on these topics. The consequence is a high risk of green washing.

Self-declarations, though, do not provide a solution to the credibility issue: that shall be addressed through communication methods able to give serious guarantees to the markets.

To contrast this aspect, in fact, an increasing number of credible initiatives and labels, often in connection with accredited third parties, namely POs, are now available on the market. The requirements for POs are defined in the ISO 14026, that provides requirements and guidelines for footprint communication Programmes.

The Italian experience CFI, namely the national PO on carbon management, is drawing an important interest thanks to the innovative application of new technologies to the specific sector, providing a transparent and credible communication Programme. Indeed, it only accepts for registration accredited verified GHG statements. It is an easy-to-use tool, providing unambiguous and unmodifiable information to the public.

It is also important to ensure collaboration and trust along the whole value chain to achieve a real sector transformation, involving and aligning all the interested parties. Transparent communication fosters cooperation along the value chain and boosts market mechanisms based on virtuous actions. It can also provide guidance to organizations undertaking the challenge of decarbonization.

However, the risk for international disarray and lack of understanding is still possible, considered that each PO can undertake different paths. It is thus necessary to establish a partnership between the existing initiatives, that leads to a more consistent approach of the various subjects on the international framework.

The experience of Carbon Footprint International surely represents a first step in this direction, because it has added to the dialogue the will to cooperate in the construction of shared pathways. Moreover, it could represent a first milestone to achieve an MRA between POs, basically a parallel system to the MLA that exists between accreditation bodies.

The idea behind this approach is that, through a common recognition, a full consistency can be achieved: when each regional system is able to prove that 1 ton of CO<sub>2</sub> is uniform everywhere, and thus comparable no matter where it is quantified, a carbon footprint study carried out in one country will be coherent with another study in a different country. This correspondence allows different studies to be easily compared, avoiding the risk of miscalculations. In today's global market place, the recognized equivalence enables companies to enhance and promote their achievements worldwide.

In parallel, it appears crucial to move towards an international recognition of the existing initiatives. Carbon Footprint International represents the first network at the global level that gathers carbon footprint POs, fostering the exchange of good practices and experiences, and an increased cooperation and harmonization is to be achieved through the CFIA. The review shows how this experience is effectively moving the context towards this direction, improving the coordination and the recognition of initiatives.

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