PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY ALLEN LIM (@ALLENLIMLE), MALAYSIA

CONCRETE SUSTAINABILITY COUNCIL

ANNUAL REPORT 2022

WWW.CSC.ECO

CONTENT

ANNUAL REPORT 2022

Dear Stakeholders,

2022 was an intense year for the CSC and marked by a number of highlights:
In 2022 the CSC was happy to welcome Liliana Lasso de la Vega as the new CSC Secretary and Technical Manager. Liliana is an industrial engineer with experience in the building materials industry and a strong background in financial management. One of her key-tasks is to coordinate the development of the next generation of the CSC certification system.
CSC certification continued to expand world-wide with first certifications in Austria, Peru, Portugal, Slovakia and Sweden and the family of CSC certification systems was enhanced by launching the CO2-Module, a dedicated label for low CO2 concrete products. The CO2 module is available for companies that have obtained or are obtaining the CSC certificate (Silver or higher), leading the concrete sector's transition to carbon neutrality. Throughout 2022, we delivered 36 CO2-Module certificates and the number is expected to continue increasing next year.
The R-Module was updated and continued to gain momentum: 40 plants, 26 of them in 2022, have been awarded with this dedicated label for recycling concrete The demand is expected to continue growing as the use of recycled aggregates is increasingly valued by green building labels.
The CSC also developed a dedicated certification system for slag grinding stations, which is available since December 1st, 2022.
The certifications performed in 2022 with the CSC System Version 2.1 were monitored and evaluated and the results are shared in this report. Insights gained through the evaluation process will be used for future improvements of the CSC certification system.

As the operator of the first and leading certification system for responsibly sourced concrete of global relevance, the CSC is proud of its contribution to making concrete and its supply chain even more sustainable.

Yours sincerely,

Christian Artelt
Chair

Michael Scharpf
Vice-Chair

2 CSC CERTIFICATION

2.1 Scope of Certification

The CSC system is a product certification system, which practically targets the certification of production plants. Typically, the certification applies to all products manufactured and supplied by the respective plant, except from the voluntary modules for recycling and low CO2-concrete, which apply to a defined product range of a plant.

Ready-mix concrete plants and precast concrete plants can obtain a “CSC certificate”. Cement, slag and aggregate suppliers can obtain a “CSC supplier certificate”. Geared towards the comprehensive coverage of the supply chain, CSC supplier certificates are fully recognized in the CSC concrete certification.

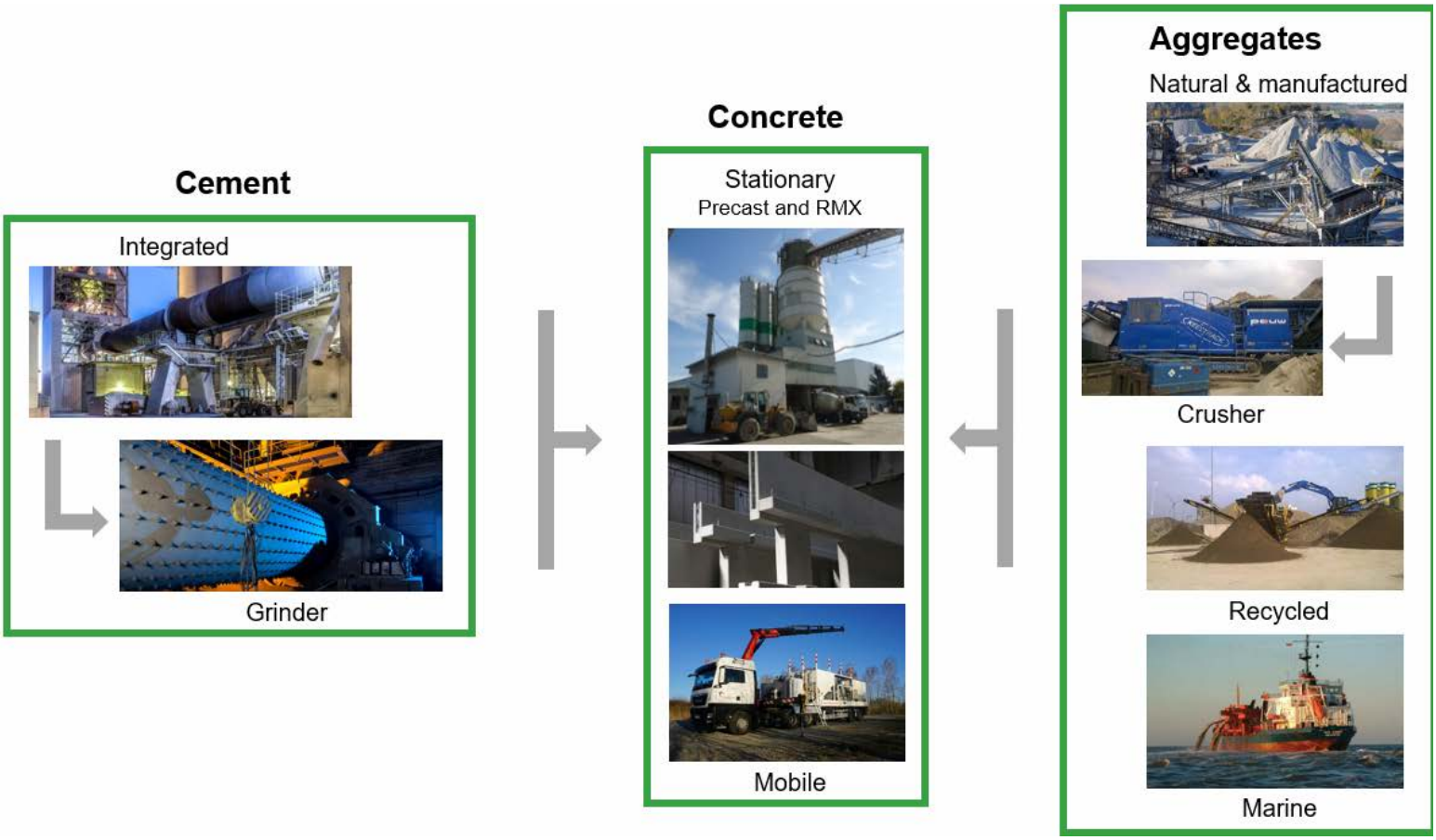

Fig.2.1: CSC certification scope

2.1.2 CSC Supplier Certification System for slag grinding stations

The CSC made available a new certification system for slag grinding stations. Slag is used in cement and concrete production. It is a by-product of pig iron production, the first major process step in steel production. The CSC certification system for slag grinding stations builds on the certification system for cement grinding stations. The slag supply is covered by recognizing responsible sourcing systems for steel, namely the CARES Sustainable Constructional Steel scheme and ResponsibleSteel™. The CSC appreciation level of these systems aligns with the coverage rate of comparable CSC system criteria.

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2.2 Scoring & Certification levels

The CSC certification system follows the concept of continuous improvement. The system currently offers four certification levels (Bronze, Silver, Gold and Platinum) to foster continuous improvement.

For certifying concrete plants, the certification level obtained is the result of a scoring system, considering the individual scores from the concrete plant, and the weighted average from its CSC certified cement and aggregates suppliers. Certifying plants need to comply with all prerequisites (see section 2.3), plants aiming to certify at the level Silver or higher furthermore need to fulfill several mandatory criteria

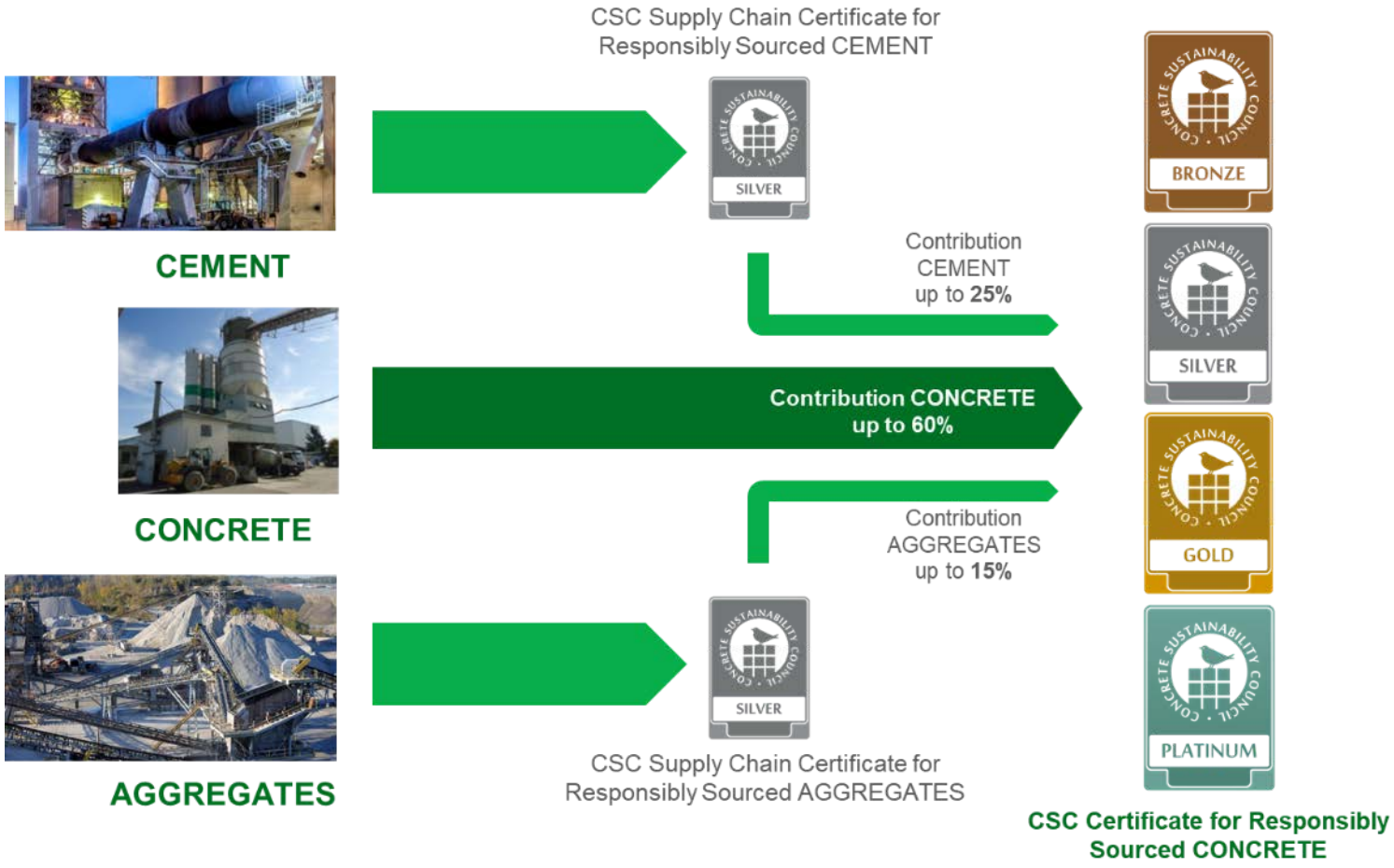

Fig.2.2: CSC scoring principles

2.3 Content of CSC certification

Each plant undergoing CSC certification must fulfill a certain number of prerequisites to obtain a CSC certificate. Provided the prerequisites are met, it can score points in the following categories:

- M - Management;
- E - Environment;
- S - Social;
- B - Economic;
- C - Supply chain.

An overview of the credits applicable in CSC version 2.1 is shown in the figure 2.3. Some of the credits or criteria only apply to the certification of a specific part of the supply chain, such as “E9 Secondary fuels” to clinker producing plants.

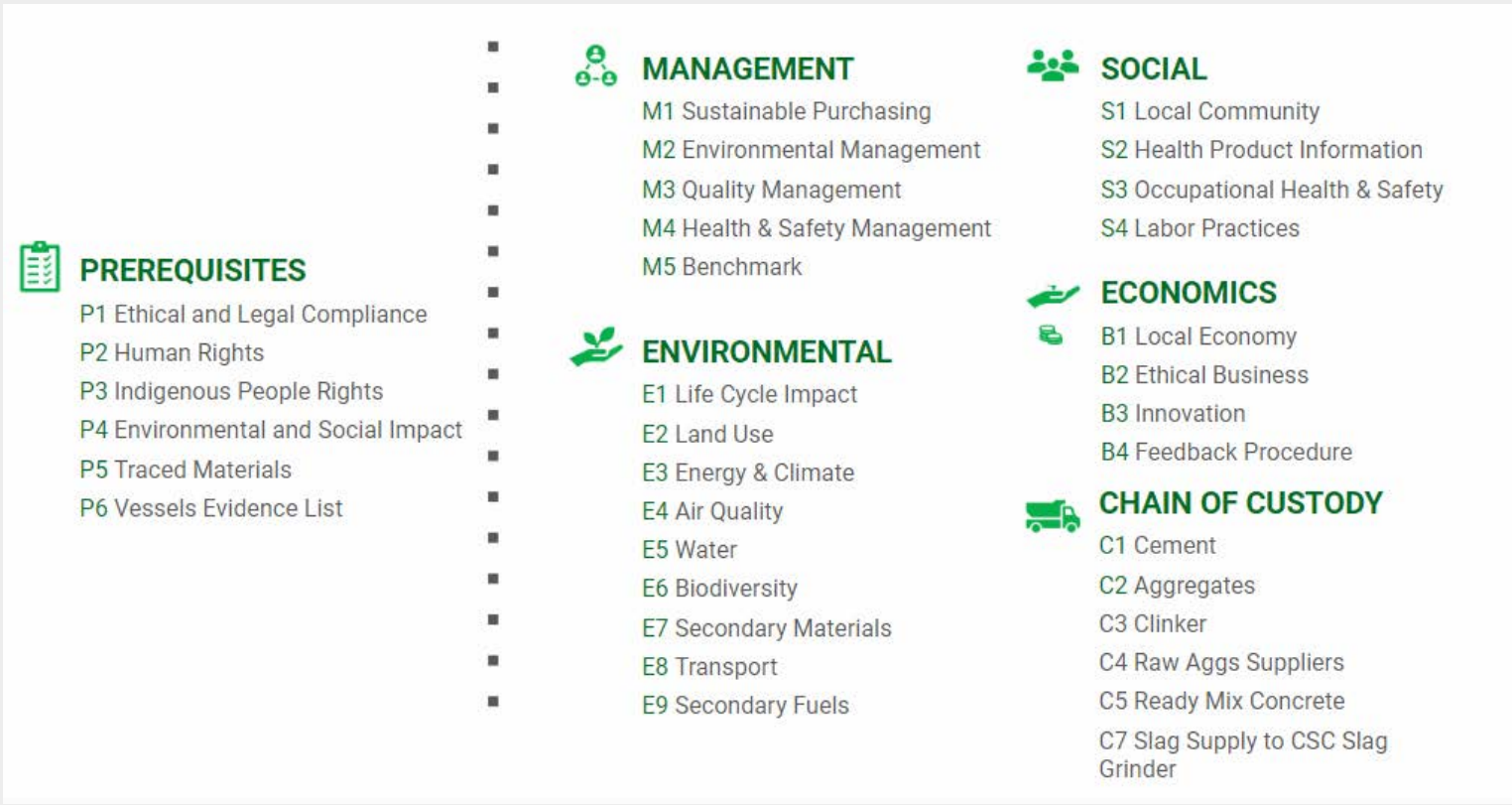

Fig.2.3: Content of CSC certification

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PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY @IVU.FAJAR INDONESIA

2.4 The "R-Module"

This module enables concrete suppliers to label concrete with a recycled aggregate content of 10% or higher. The R-Module is available for CSC-Silver (or higher) certified concrete plants and rewards maximizing the use of recycled material in fresh concrete by means of a dedicated “Star” system that was introduced with the new CSC R-Module Version 2.1.

Fig.2.4: R-Module certification content

The CSC R-Module is expressed in the certificate by a supplementary “R” label and the number of stars awarded.

Level	Min. volume-% R-material
1 Star	10
2 Stars	20
3 Stars	40
4 Stars	80

Fig.2.5: R-Module star system

2.5 The "CO2-Module"

With growing global sustainability related requirements for building materials, the CSC has further introduced an additional CO2-Module for CO2-optimized concrete. This new module is a product certification that enables concrete suppliers to label CO2-optimized concrete with a reduction in GHG emissions [kg CO2 equivalents per m³ of concrete] of at least 30 % when compared with a regional CEM I / OPC based reference mix of a given strength class. The CO2-Module is available for CSC-Silver (or higher) certified concrete plants. It is not an EPD, because it adds performance levels to material specific CO2 values in relation to a regional benchmark.

Fig. 2.6: CO2-Module certification content

The CSC CO2-Module can be obtained with one to four stars. The color (Silver, Gold, Platinum) of the CSC CO2-Module is the color of the main CSC certificate held by the concrete plant supplying the low CO2-concrete.

Level	Min. CO2 reduction vs. local baseline
1 Star	30
2 Stars	40
3 Stars	50
4 Stars	60

Fig. 2.7: CO2-Module star system

2.6 Supporting the implementation of the United Nations Sustainable Development Goals (SDGs)

CSC certification follows a holistic approach and requires compliance with five fundamental prerequisites and a wide range of social and environmental performance indicators, including “occupational Health & Safety”, “Labor practices”, “Land use”, “Energy & climate”, “Air emissions”, “Water”, “Biodiversity”, “Secondary materials”, and “transport”. With this, the CSC aims to contribute to the implementation of the SDGs in the concrete sector and its supply chain.

Most of the SDGs are directly or indirectly addressed, namely SDG 3 “Good health and well-being”, 6 “Clean water and sanitation”, 7 „Affordable and clean energy”, 8 “Decent work and economic growth”, 9 “Industry, innovation and infrastructure”, 10 “Reduced inequalities”, 11 “Sustainable cities and communities”, 12 “Responsible consumption and production”, 13 “Climate action”, 14 “Life below water”, 15 “Life on land”, and 16 “Peace, justice and strong institutions”.

Fig.2.8: The CSC system’s coverage of the SDGs

3 CREDIBILITY OF THE CSC CERTIFICATION SYSTEM

The aim of the CSC is to achieve a positive impact on the social, environmental and economic practices of concrete, cement and aggregate producers. Therefore, the CSC certification system is based on the 10 ISEAL credibility principles:

1. Sustainability

The CSC certification system aims to achieve several clearly identified sustainability objectives, namely:

- Improving the sustainable use of concrete by promoting responsible practices throughout the value chain and incentivizing continuous improvement;
- Ensuring transparency in the concrete sector by making sustainable practices more visible and enable organizations to demonstrate leadership;
- Raising the public awareness regarding the sustainability of the concrete sector and its products;
- Obtaining tangible benefit for implementing responsible sourcing by receiving recognition for the supply of CSC certified concrete in green building and green infrastructure rating systems such as BREEAM, DGNB, LEED, ÖGNI, ENVISION;
- Obtaining recognition in “green procurement” government policies and policies for social procurement.

2. Continuous Improvement

Raising the bar for obtaining CSC certification is an important lever to continuously improve responsible sourcing practices. This is achieved via a number of dedicated measures, including

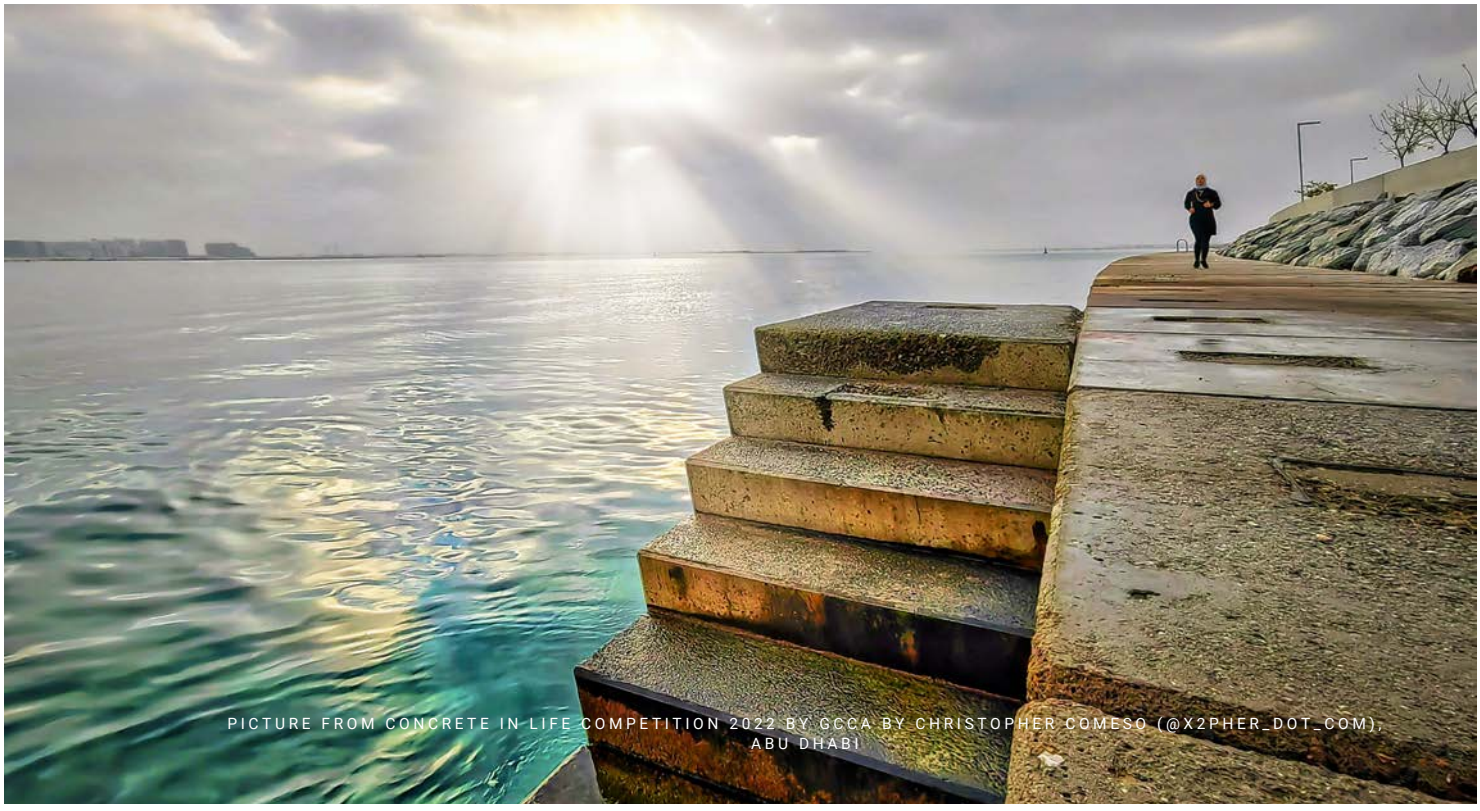
- regular discussions on the level of the CSC Technical Committee;
- the CSC’s annual report including the Regional System Operators’ (RSOs’) and Certification Bodies’ (CBs’) annual feedback;
- regular harmonization meetings between CBs;
- exchange meetings with RSOs;
- exchanges with companies undergoing certifications and certificate holders;
- stakeholder events with CSC Advisory Committee, Civil Society Organizations and Labor Organizations.

3. Relevance

Relevance of credits and criteria covered by the system are of highest importance to ensure “fitness for purpose” and progress in responsible sourcing practices. The topics covered by the certification system were consequently identified with the support of a broad range of stakeholders:

- Amongst the environmental key-topics identified are the reduction of CO2 emissions, energy and water consumption, recycling and the use of secondary materials. In the supply chain, i.e. the production of cement and aggregates, biodiversity was identified as another important topic to be carefully considered.
- Amongst the key social topics identified are relations with the local community, occupational health and safety, and labor practices.
- In the field of economics, local economy, ethical business practices and innovation were identified as particularly important.

The CSC system allows adaptations to ensure local applicability.



PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY CHRISTOPHER COMESO (@X2PHER_DOT_COM), ABU DHABI

4. Rigor

The system focuses on topics relevant for responsible sourcing. All evidence used for certification first needs to be uploaded in the CSC assessment tool, the so-called “CSC Toolbox”. In a second step, the uploaded evidence is assessed and validated by an independent CB before issuing the certificate.

5. Engagement

The system was developed and updated in a collaborative approach with involvement from internal stakeholders - i.e. enterprises, industry associations and CBs - and external stakeholders - i.e. CSOs, labor organizations, green building councils (GBCs) and academics.

6. Impartiality

The CSC has a broad range of internal stakeholders comprising concrete, cement and aggregate producers, industry associations, and CBs. Impartiality is ensured by the organization’s Governance, namely

- a General Assembly (GA) with equal voting rights for all members;
- the setup of the Executive Committee (ExCo) ensures appropriate representation of all internal stakeholders;
- the CSC Advisory Committee providing the direct voice of social and environmental stakeholder organizations;
- a dedicated grievance management procedure.

PICTURES FROM THE CSC GENERAL ASSEMBLY 2022 IN ROME

7. Transparency and
8. Accessibility

All relevant information regarding the CSC, its Governance and the certification system can be accessed via the CSC's homepage: www.csc.eco

9. Truthfulness

CSC intends to secure truthfulness, and thus confidence in products from CSC certified plants via a framework of dedicated measures:

- The CSC formally requests that claims and communications relating to CSC certification and the use of the logo are in line with the respective CSC guidance document;
- a dedicated procedure is in place to report false claims, false use of the CSC trademark and logo;
- the CSC regularly checks the use of the CSC logo and trademark, e.g. via internet spot-checks;
- the CSC reserves the right to take legal action against any false/deceptive claims including any misuse of the CSC logo.

10. Efficiency

CSC certification is aligned with ISO standards, namely ISO 14001, ISO 18001, ISO 9001, ISO 26000 and other standards. This makes the certification process efficient for companies, who are already following those standards. The CSC continuously seeks a dialogue with green building and green infrastructure labels. Recognition has been achieved within BREEAM, DGNB and ENVISION and is an important driver to create value for CSC customers. Recognition by such systems can become an important success factor for the CSC, leading to a growing number of CSC certifications, such as demonstrated in the Netherlands and in Germany.

Local promotion of the CSC certification system among stakeholders other than the concrete sector and its supply chain is key to implementing the CSC system throughout the construction value chain. Local promotion is secured through "system ownership" via RSOs who proactively engage with green building councils and public authorities.

4 CSC IN NUMBERS

4.1 2022 Annual Report Fact Sheet Summary

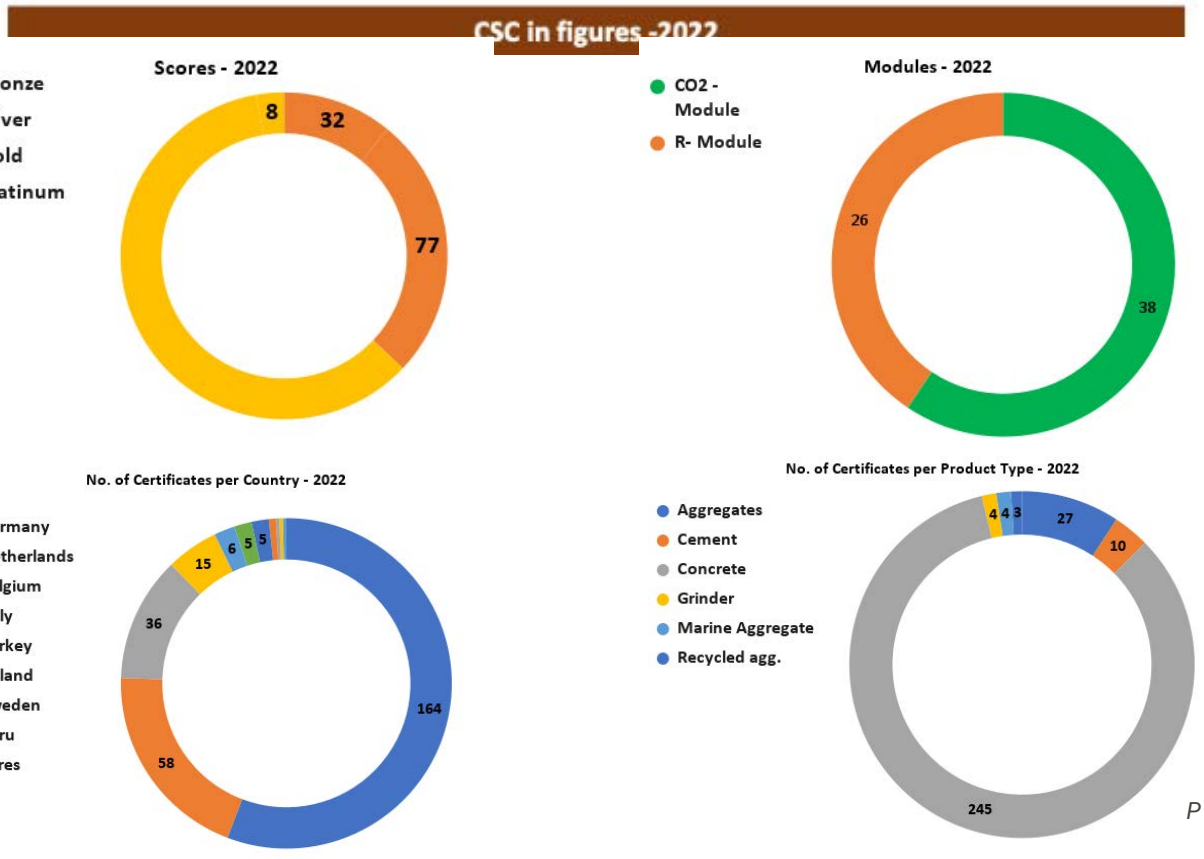
The number of annual certifications continued to increase to a record high of 294 in 2022, leading to an increase of 23% compared to 2021, largely driven by Germany, Belgium and the Netherlands, where the uptake of the new CO2-Module and the updated R-Module also gained momentum. CSC certifications continue to expand in a number of countries and regions including Italy, Turkey, Sweden, Poland and Latin America.

CSC certification uptake

- → Global coverage:
  - 16 countries
  - 471 concrete producers
  - 697 plants with active CSC certificate on Dec. 31st, 2022
- → CO2-Module successfully launched
- → R-Module expanding
- → System for slag grinding developed
- → Successful completion of OnePlanet Project (16 plants certified in Latin America)

CSC Certifications in 2022 vs. 2021

	2022	2021
concrete	246	157
aggregates	34	49
cement	14	34
Total	294	240



4.2 CSC-certifications

Since the launch of CSC-certification in January 2017, more than 900 CSC certificates have been awarded (see Table 4.1). The number of annual certifications continued to increase to a record high of 294 in 2022, leading to an increase of 23% compared to 2021.

Year	Aggregates	Cement	Concrete	Grinder	Marine Aggregate	Mobile concrete	Recycled agg.	Grand Total
2017	5	4	54					**63**
2018	3	21	50					**74**
2019	28	11	88				2	**129**
2020	36	12	138	3		1	2	**192**
2021	49	32	156	2		1		**240**
2022	27	10	246	4	4		3	**294**
Grand Total	**148**	**90**	**732**	**9**	**4**	**2**	**7**	**992**

Table 4.1: Number of certificates issued per year and per segment

246 out of the 294 certificates (≙ 84%) awarded in 2022 were concrete plant certificates.

34 supplier certificates (≙ 12%) were awarded for aggregate production sites, thereof 4 for Marine Aggregates plants and 3 for recycled aggregates plants. 14 supplier certificates (≙ 5%) were awarded for cement plants, 4 of them for cement grinding plants.

32 (≙11%) of the 2022 certificates were awarded at the level “Bronze”, 77 certificates (≙ 26%) at the level “Silver”, 177 certificates (≙ 60%) at the level “Gold”, and 8 certificates (≙ 3%) at the level “Platinum”.

Amongst the 294 CSC certification projects executed in 2022 were 164 in Germany, 58 in the Netherlands, 36 in Belgium, 15 in Italy, 6 in Turkey, 5 in Poland, 5 in Sweden, 1 in Austria, 1 in Portugal, 1 in Slovakia and 2 in Peru. This increased the number of active certificates to 697.

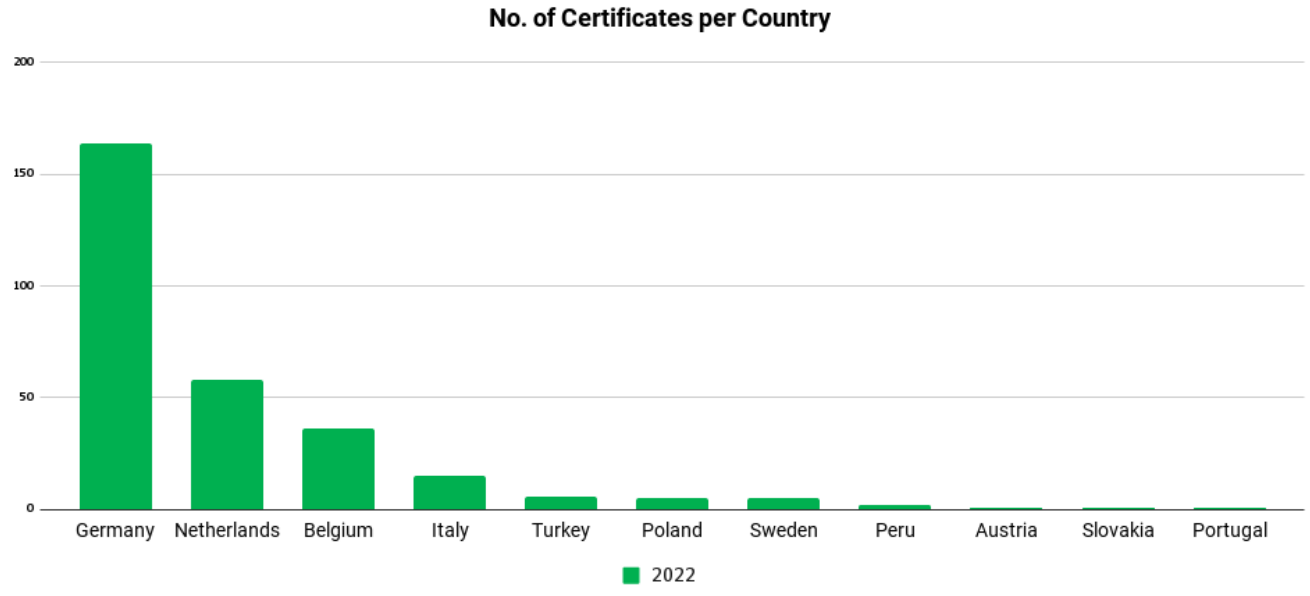


Fig 4.2: Certificates by country issued in 2022

4.3 CSC R-Module certifications

26 R-Module certifications were successfully achieved in 2022 (more than double the amount of certifications achieved in 2021); 15 of them in Germany, and 11 in the Netherlands.

4.4 CSC CO2- Module certifications

At the beginning of 2022, the CSC enhanced the CSC certification system for concrete towards CO2-emission reduced concrete. Therefore, companies who obtained a CSC-Certificate at the level Silver or higher were able to optionally obtain the additional CO2-Module.This new module aims to create transparency with regard to the greenhouse gas emissions associated with concrete production and to classify CO2-optimized concrete into CO2 classes. Since its launch, 63 CO2-module certifications have been successfully achieved. Thereof, 25 in Belgium and 38 in Germany.

5 CERTIFICATES HOLDERS'RESPONSIBLE SOURCING PERFORMANCES

This section provides an overview on the achievements of plants certified in 2021 under the latest CSC system version 2.1. The data allows gaining insight into the implementation status of sustainability practices in the concrete and aggregate sector and is used to steer future updates of the CSC certification system.

5.1 Overview on key-findings and developments

This section provides an overview on the achievements of plants certified in 2021 under the latest CSC system version 2.1. The data allows gaining insight into the implementation status of sustainability practices in the concrete and aggregate sector and is used to steer future updates of the CSC certification system.

Management

- Nearly all CSC certified plants have a purchasing policy in place, which includes responsible sourcing as a criterion in their procurement process.
- More than 95% of all certified plants have documented management systems in place addressing environmental- quality- and health and safety related issues.

Social

- Good relationships with the surrounding community, occupational health and safety practices and criteria relating to labor practices are generally well established and mostly fulfilled.
- Criteria addressing occupational health and safety practices and fair and equitable treatment of the workforce are generally fulfilled by all plants.
- The criterion on work-life balance is now achieved by almost all plants, becoming a general standard in the industry.

Environmental

- The overall fulfillment rate in all concrete, aggregates and cement plants is generally elevated in particular criteria addressing responsible land use, protection from pollution, air quality and the implementation of life cycle assessment (LCA).
- Most newly certified sites have implemented a transport policy, have a transport management system in place and perform fuel saving awareness training.
- The use of renewable electrical energy is gaining relevance.
- Energy and climate related criteria are largely complied with.

5.2 Concrete Producers

254 concrete plants were awarded in 2022 with a a Bronze, Silver, Gold or Platinum CSC certificate version 2.1.

5.2.1 Management Criteria

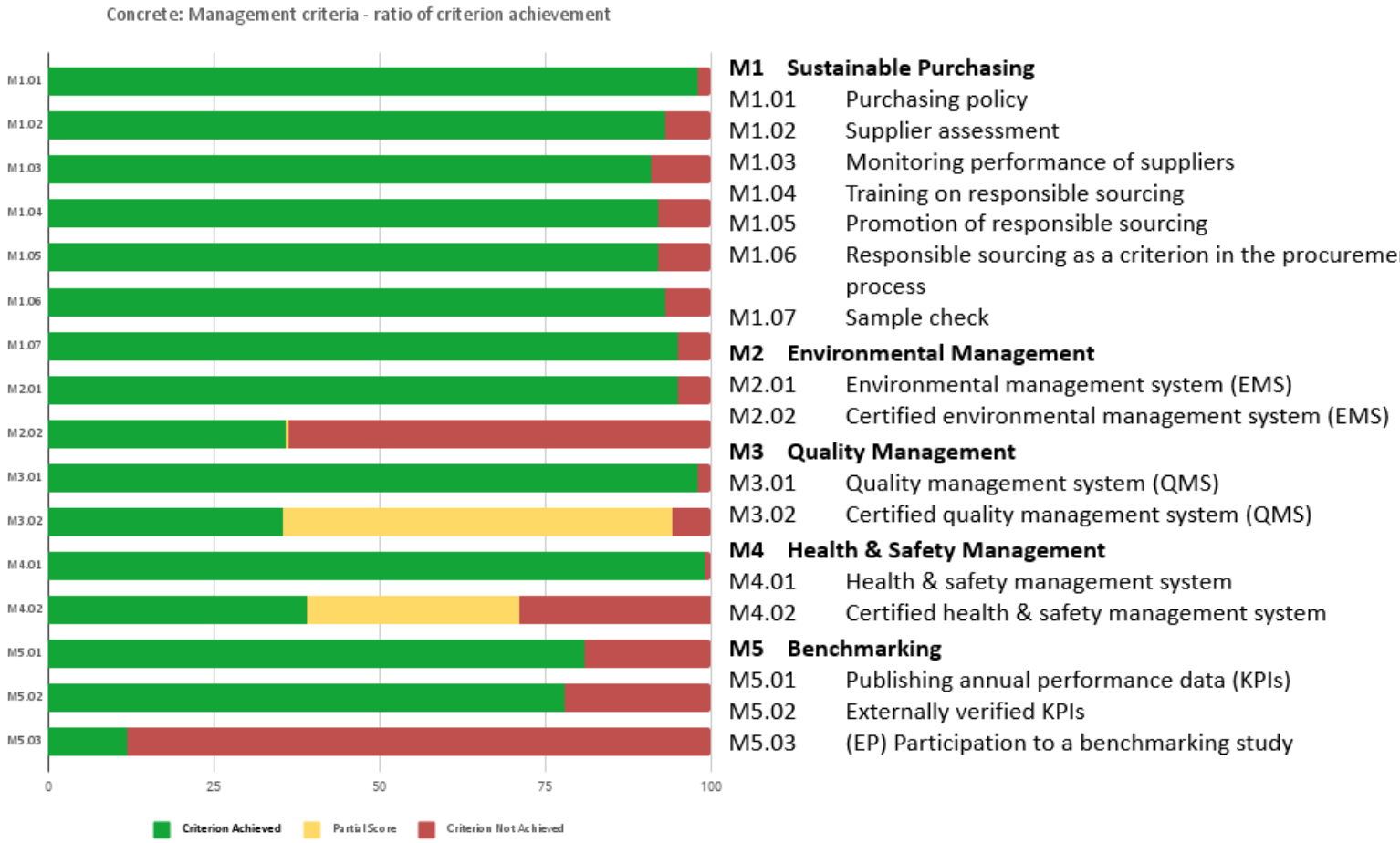


Fig 5.1 Concrete: Management criteria-ratio of criterion achievement ((Bronze, Silver, Gold, Platinum)

Fig. 5.1 provides insight into the achievement of management related certification criteria: It can be seen that nearly all CSC certified concrete plants meanwhile show very good practices in sustainable purchasing (→ M1). New CSC certificate holders have achieved significant rates of 90% and higher in monitoring the sustainability performance of suppliers (→ M1.03) and providing training on responsible sourcing (→ M1.04). Almost all certified plants have documented management systems in place addressing environmental- (→ M2.01) quality- (→ M3.01), and health and safety (→ M4.01) related issues. Significant progress was made in the implementation of documented management systems over the past years as in CSC certification system version 2.1 this is now requested for all plants undergoing CSC certification at the level Silver or higher.

At the same time, low to moderate achievement rates of criteria M2.02, M3.02 and M4.02 clearly indicate that the implementation of certified management systems such as ISO 14001, ISO 9001 and ISO 45001 still leaves room for acceleration. In 2022 36% of the newly CSC certified were having ISO 14001 certified environmental management system in place.

5.2.2 Environmental Criteria

Fig. 5.2 provides an overview on the achievement ratio of certification criteria relating to environmental issues: The achievement of environmental criteria shows a mixed picture. The overall fulfillment rate of criteria for the protection of pollution (→E2.03) is 100%. Also, the implementation of life cycle assessment (LCA) (→E1.02), responsible land use (→E2.02), climate policy (→E3.01), energy reduction potential (→E3.02), energy saving awareness creation (→E3.11), clean air silos (→E4.08),water (→E5) with the exception of (→E5.04, E5.04), assessment of the availability of secondary materials (→E7.01), responsible processing of returned concrete (→E7.04), transport policy (→E8.01) and transport management system (→E8.02) have reached a fulfillment rate above 90 % as LCA has become a frequent requirement for the concrete sector and policies to avoid globally or nationally important sites, water and transport management have continued to become increasingly common .

Room for further improvement relates to the release of EPDs (→ E1.03) as only 43% of the certified concrete producers have shown compliance with this criterion in 2022. Furthermore, for around 30% of the certified plants there is the opportunity to engage in reporting on GHG emissions (→ E3.03, and E3.04) and on water use (→ E5.04, E5.05). Other areas providing improvement opportunities include optimizing the use of secondary materials (→ E7.05 and E7.06) and implementing trucks with innovative, CO2 emission reducing drive technology (→ E8.04).

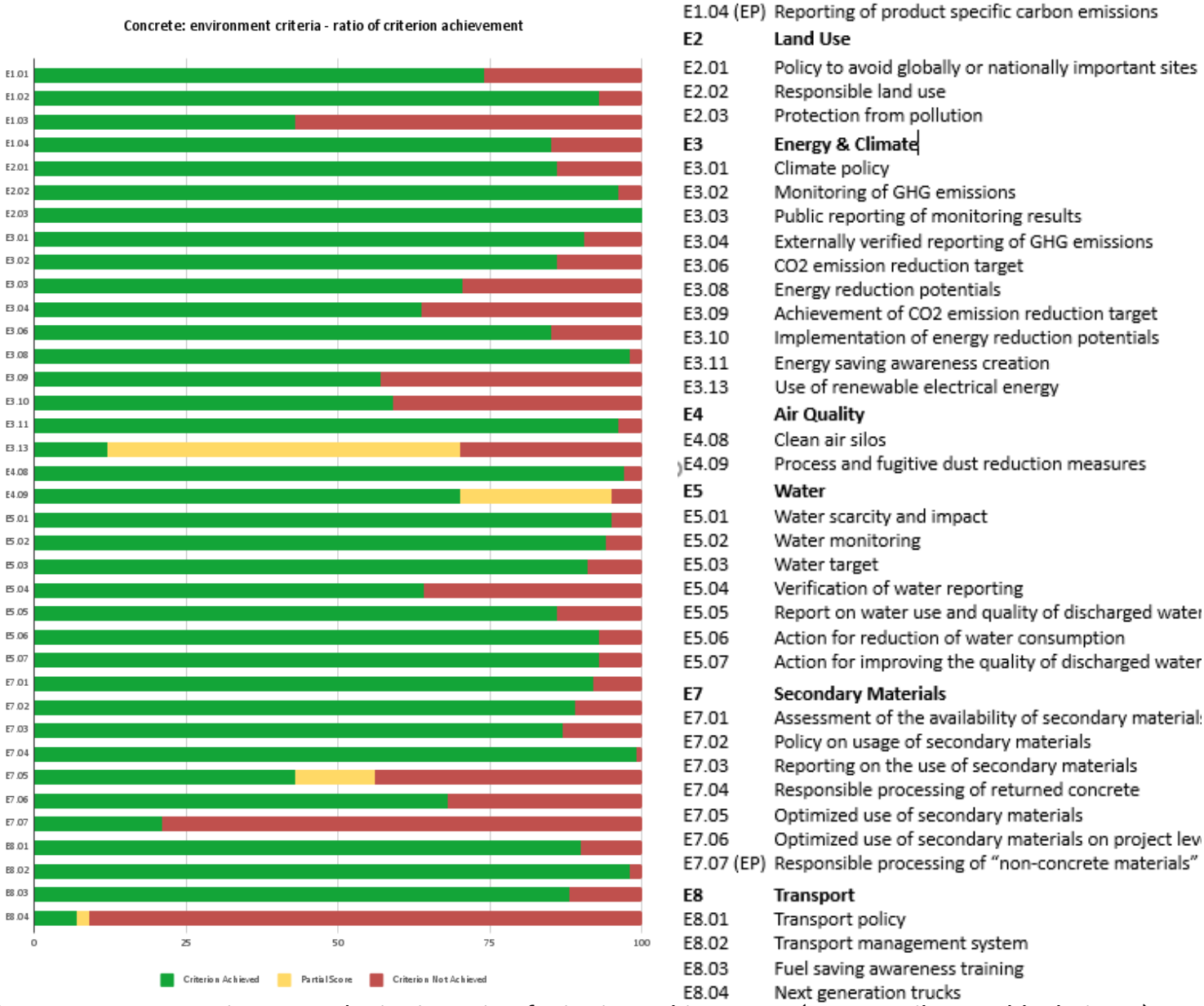
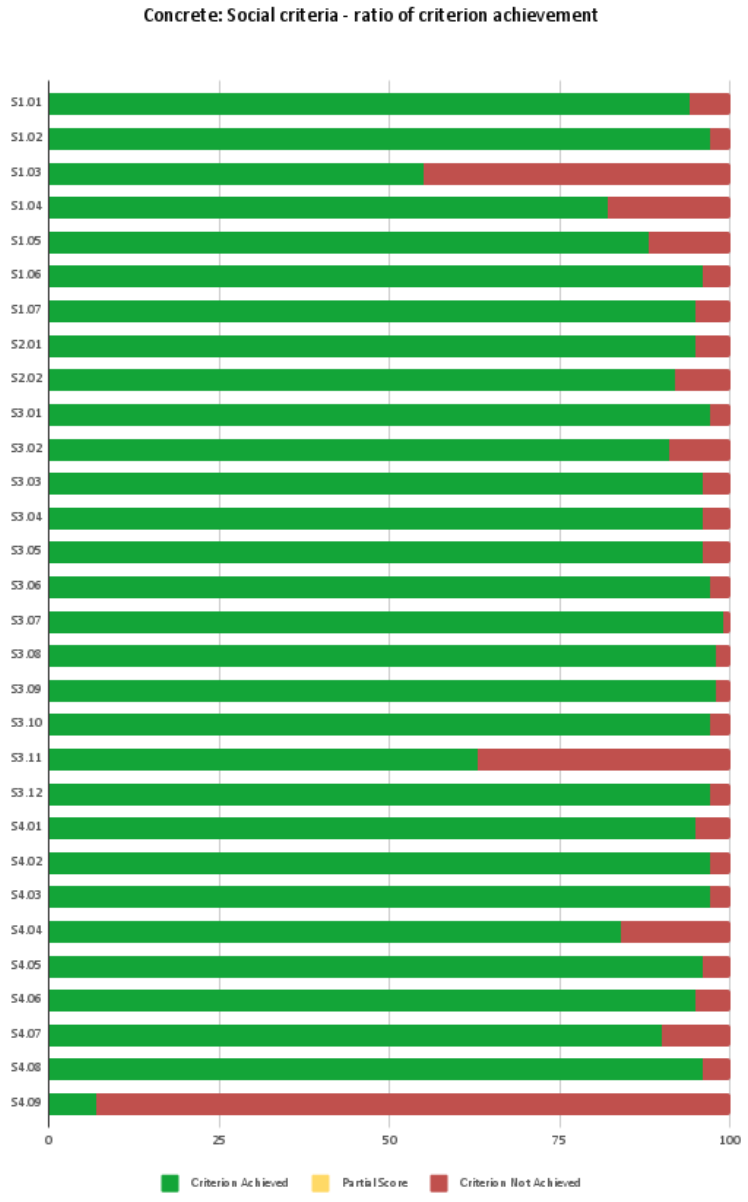


Fig 5.2 Concrete: Environmental criteria- ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

5.2.3 Social criteria

Fig. 5.3 summarizes the achievement of certification criteria relating to social issues: good relationships with the surrounding community are important for concrete plants as many of them operate in industrial zones located near residential areas. Nonetheless, an improvement opportunity for around 6% of the certified concrete plants includes implementing a policy committing to engage with the local community on a regular basis (→ S1.01). Around 45% of the certified plants still may engage into a more active communication with the local community (→ S1.03) and around 15% of the plants remain with the opportunity to develop and implement a noise management plan (→ S1.04, S1.05).

In 2022, measures to promote work-life balance have been implemented (→S4.08) by around 96% of the concrete plants undergoing certification while external control of social standard and compliance with human rights (→ S4.09) is clearly still not yet state-of-the-art.



S1	**Local Community**
S1.01	Policy
S1.02	Social investment
S1.03	Communication & information
S1.04	Noise management plan
S1.05	Implementation of the noise pollution, vibration and/or management plan
S1.06	Safety around site for the local community
S1.07	Transport to and from the site
S2	**Health Product Information**
S2.01	Public availability of information about product risks and safety
S2.02	Proactive awareness downstream
S3	**Occupational Health & Safety**
S3.01	Risk analysis
S3.02	Risk analysis at least on an annual basis
S3.03	Preventive actions
S3.04	Occupational health and safety policy
S3.05	Availability of the OHS policy
S3.06	Access to medical treatment
S3.07	Access to clean drinking water
S3.08	Training on health and safety
S3.09	Recording of incidents
S3.10	Corrective actions based upon incidents
S3.11	No lost time injuries (LTI) during last three years
S3.12	No fatality during last three years
S4	**Labor Practice**
S4.01	Policy on social protection
S4.02	Personal record for all employees
S4.03	Access to personal record for all employees
S4.04	Personal evaluation
S4.05	Availability of job profiles
S4.06	Skills development in the workplace
S4.07	Preventive medical examination
S4.08	Work-life-balance
S4.09 (EP)	External control of social standards and compliance with human rights

Fig 5.3 Concrete: Social Criteria- ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

5.2.4 Supply chain criteria

Fig. 5.4 summarizes the achievement of the supply chain criteria “C1.01 Cement” and “C2.01 Aggregates”. 0% achievement means that a CSC certified concrete plant does not use any CSC certified aggregates or cement, respectively. 100% achievement means that a CSC certified concrete plant uses 100% CSC certified aggregates or cement, and that the respective suppliers achieved a total scoring of 100%. Supplier scores lower than 100% always lead to an achievement rate of less than 100% in the concrete certificate, even if the complete supply is from certified producers.

According to fig. 5.4, 8 % of the plants do not use any CSC certified cement.. About 55% of the concrete plants reached a scoring between 91% and nearly 100%.
On the other hand, 61% of the CSC-certified concrete plants use no CSC-certified aggregates, this relates to the limited availability of CSC certified aggregates in many regions. Overall, the aggregate supplier certificates show a slower uptake than cement, primarily due to a more fragmented situation in the aggregates market. It is expected that the achievement ratio of the criterion C2.01 will continue to improve as the number of aggregates producers continues to increase.

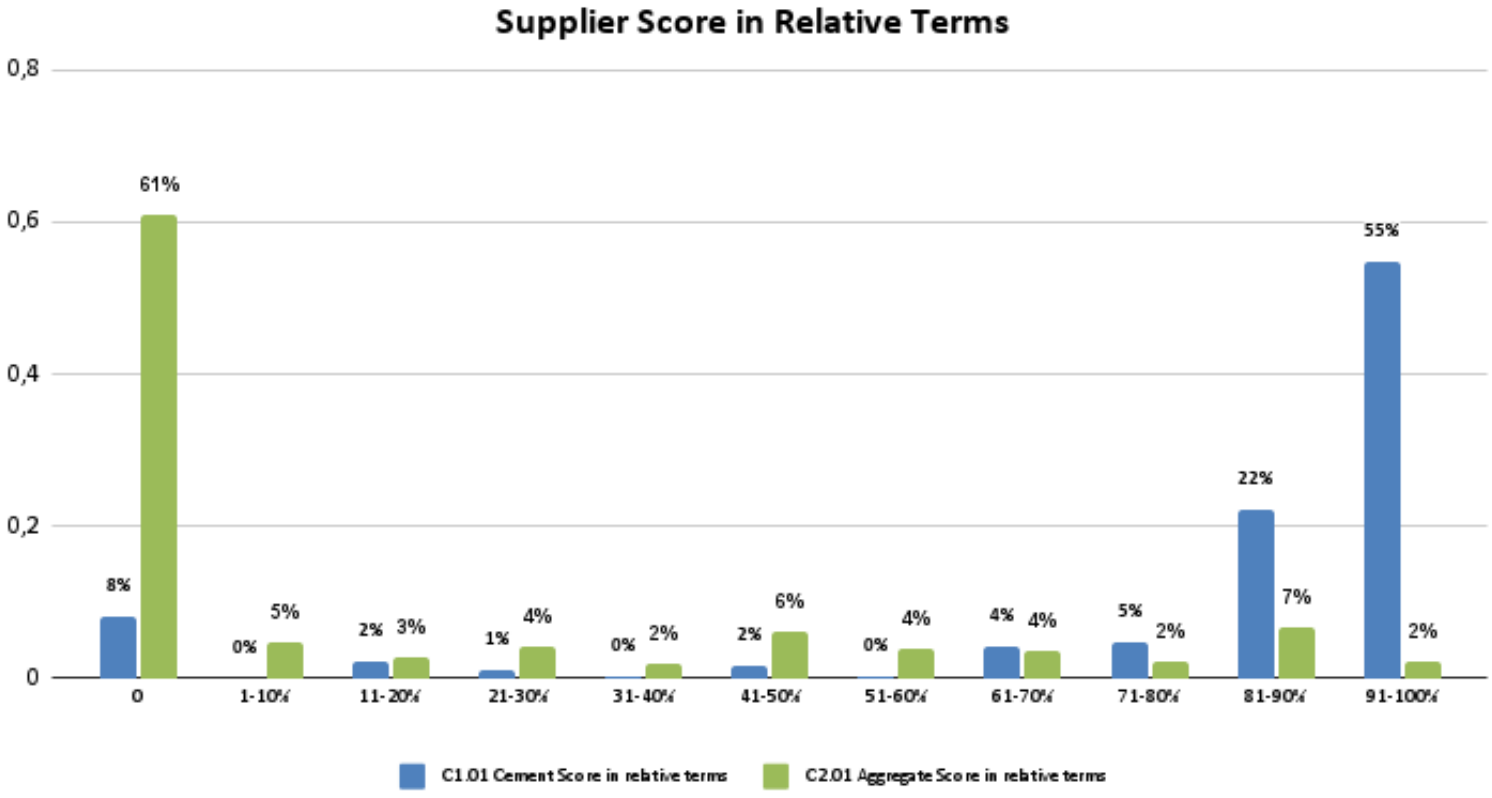


Fig 5.4 Concrete: Supply chain- ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BYJOEY S. REGINALDO (@SIJOEYTO_), METRO STATION, DUBAI

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY MARIA MENDOZA (@MARIADEMENDZ), UAE

5.3 Aggregate Producers

35 Aggregate production sites were awarded in 2022 with a Bronze, Silver, Gold or Platinum CSC supplier certificate version 2.1. Additionally, 4 marine aggregates and 3 recycled aggregates sites were certified, making use of the certification system released in October 2021.

The scope of certification of the new marine aggregates supplier certificate includes a wharf (where the marine aggregates are unloaded), its dredging zones (supplying excavation sites) and - via a dedicated evidence list - the dredgers (ships) that excavate and ensure the supply of the wharf.

The recycling plants, unlike traditional aggregate producers, do not maintain a quarry, as they are using secondary raw materials for producing sand and aggregates. Main material sources included in the scope of recycled aggregates sites are construction and demolition waste (C&DW), concrete rubble and hardened returned concrete. The processing of these materials into sand and aggregates is similar to hardrock and includes crushing, sieving and possibly other process steps such as sorting and washing.

5.3.1 Management Criteria

Fig. 5.5 provides insight into the achievement of management related certification criteria: Concerning sustainable purchasing (→ M1) there remains a number of improvement opportunities relating to assessing and monitoring the performance of suppliers (→ M1.02, → M1.03), training on responsible sourcing (→ M1.04) and promotion of responsible sourcing (→ M1.05). Purchasing Policies covering social and environmental aspects (→M1.01) have been implemented by all production sites undergoing certification and ensure that responsible sourcing is part of the purchasing process (→M1.06).

Health and Safety documented management systems (HSMS) have become state of the art (→M4.01) while Environmental Management Systems (EMS) (→M2.01) and Quality Management Systems (QMS) (→M3.01) are getting there too, as they are practically implemented in all certified plants. Certified EMS (→M2.02), QMS (→M3.02) and HSMS (→M4.02) are not yet implemented in all plants .
Finally, benchmarking and reporting (→ M5) are still not common practice throughout the sector and continue to be an area providing opportunities for further improvement.

M1 Sustainable Purchasing

M1.01 Purchasing policy
M1.02 Supplier assessment
M1.03 Monitoring performance of suppliers
M1.04 Training on responsible sourcing
M1.05 Promotion of responsible sourcing
M1.06 Responsible sourcing as a criterion in the procurement process
M1.07 Sample check

M2 Environmental Management

M2.01 Environmental management system (EMS)
M2.02 Certified environmental management system (EMS)

M3 Quality Management

M3.01 Quality management system (QMS)
M3.02 Certified quality management system (QMS)

M4 Health & Safety Management

M4.01 Health & safety management system
M4.02 Certified health & safety management system

M5 Benchmarking

M5.01 Publishing annual performance data (KPIs)
M5.02 Externally verified KPIs
M5.03 (EP) Participation to a benchmarking study

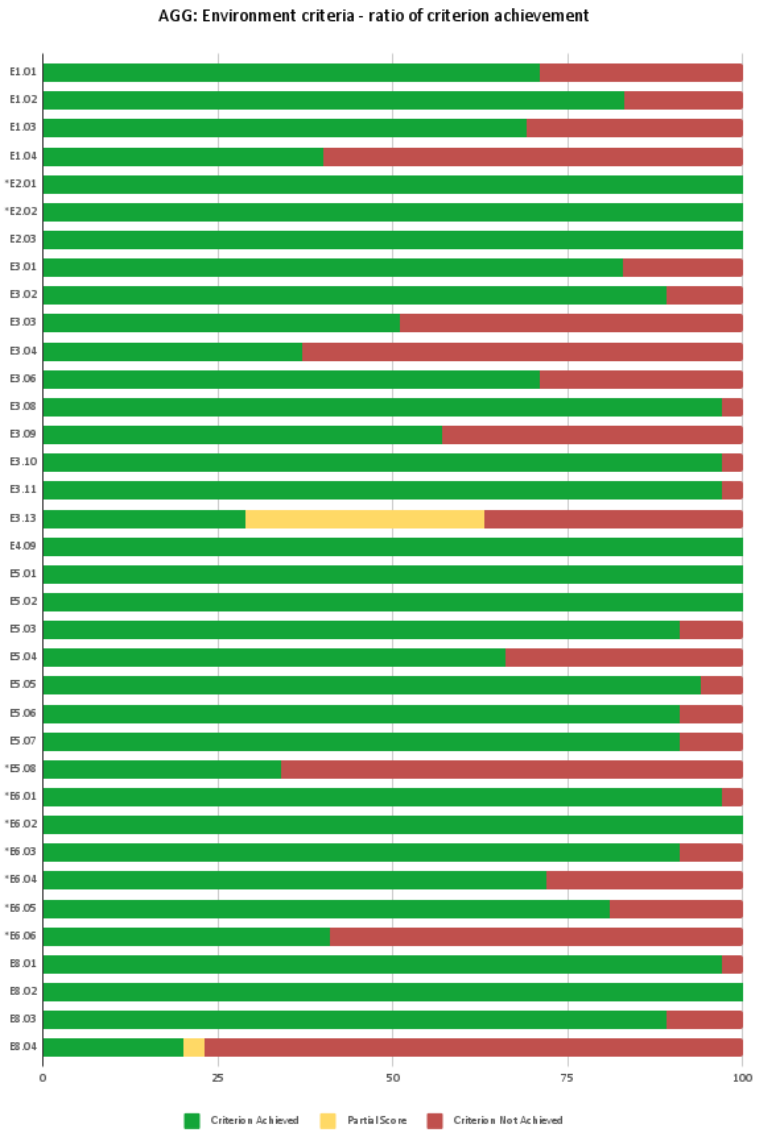
Fig 5.5 Aggregates Management Criteria- ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

5.3.2 Environmental criteria

Fig. 5.6 provides an overview on the overall fulfillment of environmental issues. The achievement ratio of certification criteria addressing implementation of Life Cycle Assessment (LCA) (→ E1.02), Land Use (→ E2), Climate policy (→ E3.01), Monitoring of GHG emissions (→ E3.02), Energy reduction potentials and Implementation (→ E3.08, → E3.10), Energy saving awareness creation (→ E3.11), Air Quality (→ E4), Water (→ E5), with the exception of Verification of water reporting (→ E5.04), Supplying water to nearby communities (→ E5.08) and Biodiversity (→ E6), with the exception of Regular biodiversity value area assessment (→ E6.04) and Biodiversity impact assessment (→ E6.06) is generally very elevated, above 80% and in most cases 100%.

Regarding the credit on transportation (→ E8), 100% of the newly certified sites have a transport policy, a transport management system in place and more than 80% have implemented fuel saving awareness training (→ E8.03). However, only 20% of the production sites undergoing CSC certification (Bronze, Silver, Gold, Platinum) in 2022 are making use of innovative trucks with CO2 emission reducing drive technology.

The use of renewable electrical energy (E3.13) is winning adherents. In 2022, 10 plants fulfilled the criterion and another 12 partially achieved it.



E1	**Life Cycle Impact**
E1.01	Sectoral environmental product declaration
E1.02	Implementation of life cycle assessment (LCA)
E1.03	Release of environmental product declarations (EPDs)
E2	**Land Use**
E2.01	Policy to avoid globally or national important sites
E2.02	Responsible land use
E2.03	Protection from pollution
E3	**Energy & Climate**
E3.01	Climate policy
E3.02	Monitoring of GHG emissions
E3.03	Public reporting of monitoring results
E3.04	Externally verified reporting of GHG emissions
E3.06	CO2 emission reduction target
E3.08	Energy reduction potentials
E3.09	Achievement of CO2 emission reduction target
E3.10	Implementation of energy reduction potentials
E3.11	Energy saving awareness creation
E13.13	Use of renewable electrical energy
E4	**Air Quality**
E4.09	Process and fugitive dust reduction measures
E5	**Water**
E5.01	Water scarcity and impact
E5.02	Water monitoring
E5.03	Water target
E5.04	Verification of water reporting
E5.05	Report on water use and quality of discharged water
E5.06	Action for reduction of water consumption
E5.07	Action for improving the quality of discharged water
E5.08 (EP)	Supplying water to nearby communities
E6	**Biodiversity**
E6.01	Biodiversity policy
E6.02	Biodiversity assessment
E6.03	High biodiversity value area assessment
E6.04	Regular biodiversity value area assessment
E6.05	Biodiversity management / action plan
E6.06	Biodiversity impact assessment
E8	**Transport**
E8.01	Transport policy
E8.02	Transport management system
E8.03	Fuel saving awareness training
E8.04	(EP) Next generation trucks

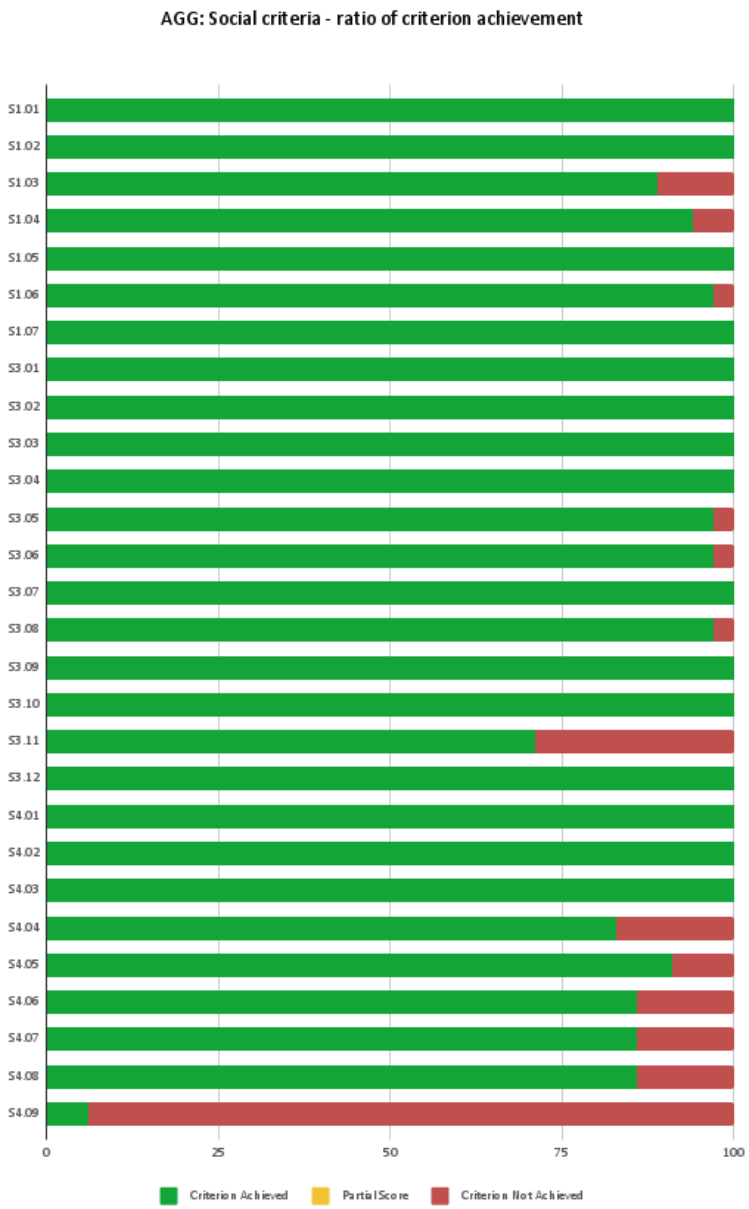
*not relevant for recycled aggregate producers, only producers of primary materials are considered in the evaluation

Fig 5.6 Aggregates: Environmental criteria - ratio of criterion achievement

5.3.3 Social criteria

Fig. 5.7 summarizes the achievement rates of certification criteria relating to social issues: The overall scoring in social credits is elevated. Good relationships with the surrounding community are well established as they are important to secure "the license to operate". Criteria addressing occupational health and safety practices (→ S3) and fair and equitable treatment of the workforce (→ S4) have elevated fulfillment rates. Additional effort can particularly be made to further reduce the risk of accidents (→ S3.11).

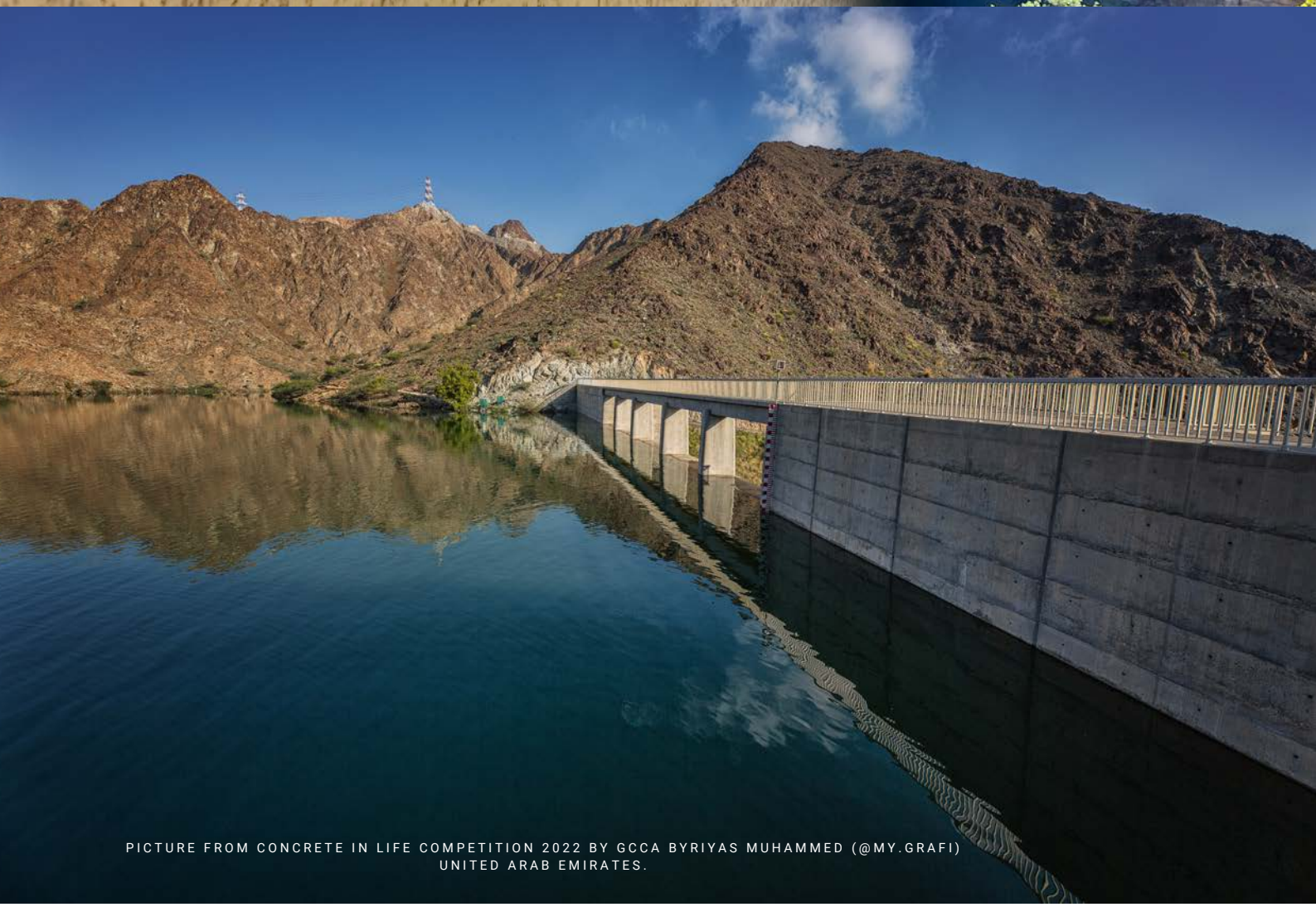
The exemplary performance criterion on external control of social standards and compliance with human rights (→ S4.09), which was implemented in 2020, continues – as expected – to be very challenging, being achieved by only around 6% of the aggregate production sites undergoing certification in 2022.



S1	**Local Community**
S1.01	Policy
S1.02	Social investment
S1.03	Communication & information
S1.04	Noise management plan
S1.05	Implementation of the noise pollution, vibration and/or management plan
S1.06	Safety around site for the local community
S1.07	Transport to and from the site
S3	**Occupational Health & Safety**
S3.01	Risk analysis
S3.02	Risk analysis at least once every year
S3.03	Preventive actions
S3.04	Occupational health and safety policy
S3.05	Availability of the OHS policy
S3.06	Access to medical treatment
S3.07	Access to clean drinking water
S3.08	Training on health and safety
S3.09	Recording of incidents
S3.10	Corrective actions based upon incidents
S3.11	No lost time injuries (LTI) during last three years
S3.12	No fatality during last three years
S4	**Labor Practice**
S4.01	Policy on social protection
S4.02	Personal record for all employees
S4.03	Access to personal record for all employees
S4.04	Personal evaluation
S4.05	Availability of job profiles
S4.06	Skills development in the workplace
S4.07	Preventive medical examination
S4.08	Work-life-balance
S4.09 (EP)	External control of social standards and compliance with human rights

Fig 5.7: Aggregates: Social criteria - ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY TINA BERNAD (@TINAL.BERNAD), COLORADO



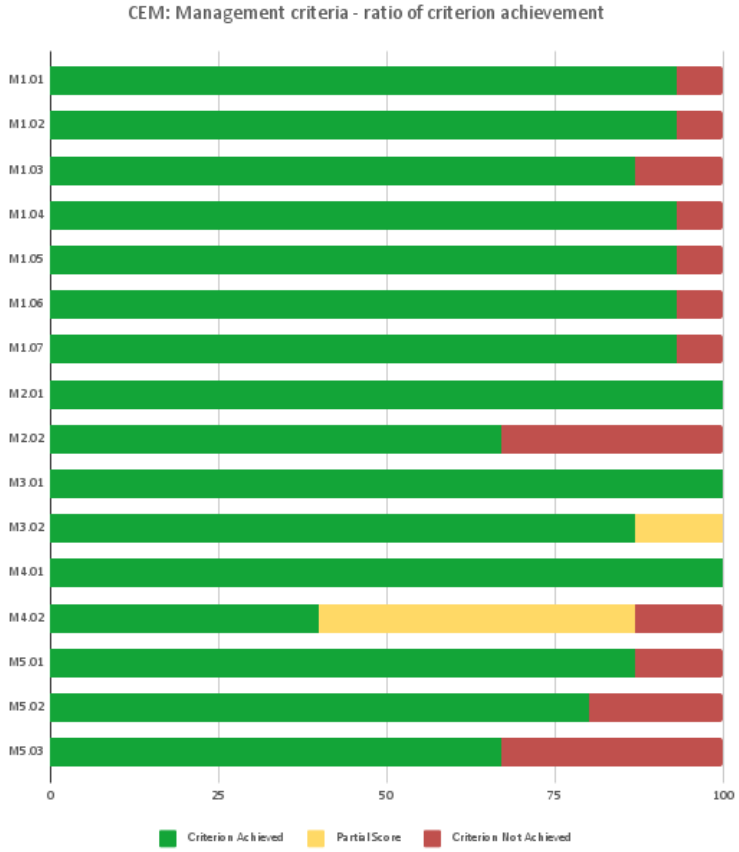
PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BYRIYAS MUHAMMED (@MY.GRAFI) UNITED ARAB EMIRATES.

5.4 Cement Producers

15 cement plants were awarded in 2022 with a Bronze, Silver, Gold or Platinum CSC supplier certificate version 2.1.

5.4.1 Management Criteria

Fig. 5.8 provides insight into the achievement of management related certification criteria. The implementation of sustainable purchasing (→ M1) practices is well advanced in most plants undergoing certification. Clinker and cement production is performed in plants equipped with mills, kilns and other heavy machinery. This explains why documented management systems (→ M2.01, M3.01 and M4.01) are implemented in all plants. On the other hand, certified EMS (→ M2.02), QMS (→ M3.02) and HSMS (→ M4.02) still remain to be implemented in some plants.
Cement plants are in the spotlight of public attention due to the high amount of energy required for clinker production and the related CO2 emissions. Publishing annual performance data (→ M5) is therefore important to ensure transparency and still has to be implemented in some plants.



M1 Sustainable Purchasing
M1.01 Purchasing policy
M1.02 Supplier assessment
M1.03 Monitoring performance of suppliers
M1.04 Training on responsible sourcing
M1.05 Promotion of responsible sourcing
M1.06 Responsible sourcing as a criterion in the procurement process
M1.07 Sample check

M2 Environmental Management
M2.01 Environmental management system (EMS)
M2.02 Certified environmental management system (EMS)

M3 Quality Management
M3.01 Quality management system (QMS)
M3.02 Certified quality management system (QMS)

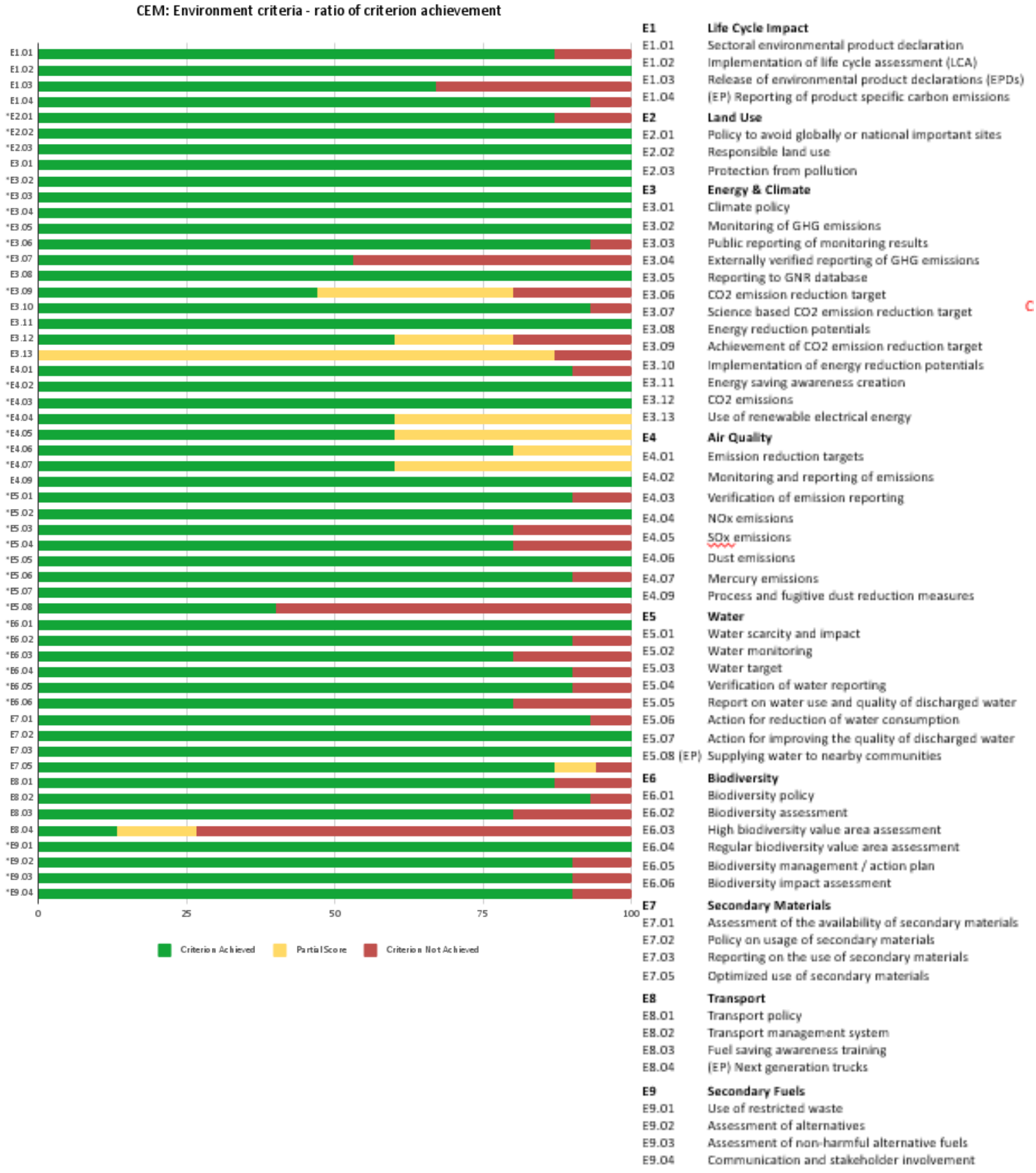
M4 Health & Safety Management
M4.01 Health & safety management system
M4.02 Certified health & safety management system

M5 Benchmarking
M5.01 Publishing annual performance data (KPIs)
M5.02 Externally verified KPIs
M5.03 (EP) Participation to a benchmarking study

Fig 5.8: Cement: Management criteria - ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

5.4.2 Environmental Criteria

Fig. 5.9 provides an overview on the achievement ratio of certification criteria relating to environmental issues: The achievement ratio of environmental criteria shows elevated fulfillment rates with improvement opportunities in some criteria.



*not relevant for cement grinders, only clinker producers are considered in the evaluation

Fig 5.9: Cement: Environmental criteria - ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

Most plants have contributed to sectoral Environmental Product Declarations (EPDs) (→ E1.01) but around one third of all plants still have not produced and published EPDs themselves (→ E1.03). Energy and climate (→ E3) related criteria are largely complied with. However, there is one quite important improvement opportunity, namely to set science-based CO2 emission reduction targets (→ E3.07) and to progress on achieving these (→ E3.09). This is underlined by the opportunity to increase the use of renewable electricity (→ E3.13) to reduce Scope 2 related emissions.

Progress is being made in reducing other emissions, as all plants undergoing certification totally or partially achieved compliance level with criteria NOx (→ E4.04), SOx (→ E4.05), dust (→ E4.06) and mercury emissions (→ E4.06).
Compliance with criteria relating to water issues (→ E5) is generally very elevated (above 80% or even 100%) at the exception of criteria E5.08. However, 57% of the plants had the opportunity to supply water to nearby communities and consequently scored in this exemplary performance criterion.

Biodiversity (→ E6) is a very important topic when it comes to quarrying activities. The achievement ratio of cement plants undergoing CSC certification in 2022 was overall very good. All plants undergoing CSC-certification (with the exception of one plant) were carrying out biodiversity assessments (→ E6.02), regular biodiversity value area assessment (→ E6.04) and setting up biodiversity management plants (→ E6.05).
In the same way, implementing a transport policy (→ E8.01) and a transport management system (→ E8.02) is almost covered by all plants. Addressing the use of next generation trucks (→ E8.04) is still an opportunity area for improvement.

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY DINAR WAHYU HERLAMBANG (@IDEALISTICALITH), INDONESIA

5.4.3 Social Criteria

Fig. 5.10 summarizes the achievement rates of certification criteria relating to social issues: The overall scoring in social criteria is very elevated. Good relationships with the surrounding community (→ S1), occupational health and safety practices (→ S3) and criteria relating to labor practices (→ S4) are generally well established and mostly fulfilled. However, additional effort can be made in many cases to further reduce the risk of accidents (→ S3.11).
The exemplary performance criterion on external control of social standards and compliance with human rights (→ S4.09) is – as expected – very challenging and is achieved by only around 20% of the cement production sites undergoing certification.

S1	**Local Community**
S1.01	Policy
S1.02	Social investment
S1.03	Communication & information
S1.04	Noise/ vibration management plan
S1.05	Implementation of the noise/vibration management plan
S1.06	Safety around site for the local community
S1.07	Transport to and from the site
S2	**Health Product Information**
S2.01	Public availability of information about product risks and safety
S3	**Occupational Health & Safety**
S3.01	Risk analysis
S3.02	Risk analysis at least on an annual basis
S3.03	Preventive actions
S3.04	Occupational health and safety policy
S3.05	Availability of the OHS policy
S3.06	Access to medical treatment
S3.07	Access to clean drinking water
S3.08	Training on health and safety
S3.09	Recording of incidents
S3.10	Corrective actions based upon incidents
S3.11	No lost time injuries (LTI) during last three years
S3.12	No fatality during last three years
S4	**Labor Practice**
S4.01	Policy on social protection
S4.02	Personal record for all employees
S4.03	Access to personal record for all employees
S4.04	Personal evaluation
S4.05	Availability of job profiles
S4.06	Skills development in the workplace
S4.07	Preventive medical examination
S4.08	Work-life-balance
S4.09 (EP)	External control of social standards and compliance with human rights

Fig 5.10: Cement: Social criteria - ratio of criterion achievement (Bronze, Silver, Gold, Platinum)

5.4 General Remarks

CSC certification is frequently performed by concrete plants, aggregate production sites and by cement plants with the ambition to advance their sustainability practices and to improve their score. Consequently, their overall responsible sourcing performance is likely to exceed the sector's average performance and to continue increasing over time

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6 INNOVATION

The CSC certification system promotes innovation via the dedicated innovation credit “B3 Innovation”.

This credit aims at stimulating

- the development and implementation of new solutions that contribute to the sustainability of the operations, its products, its suppliers or other parts of the value chain;
- best practices in the field of sustainability that are not covered by this certification system; and
- exemplary performance under any CSC certification criterion.

In 2022, the CSC’s innovation committee (IC) rewarded 56 innovation applications submitted by projects undergoing CSC certification or according to CSC System Version 2.1.
Innovation points were granted to all applications submitted, with results ranging between 1 and 9 points out of a maximum of 9 achievable points.

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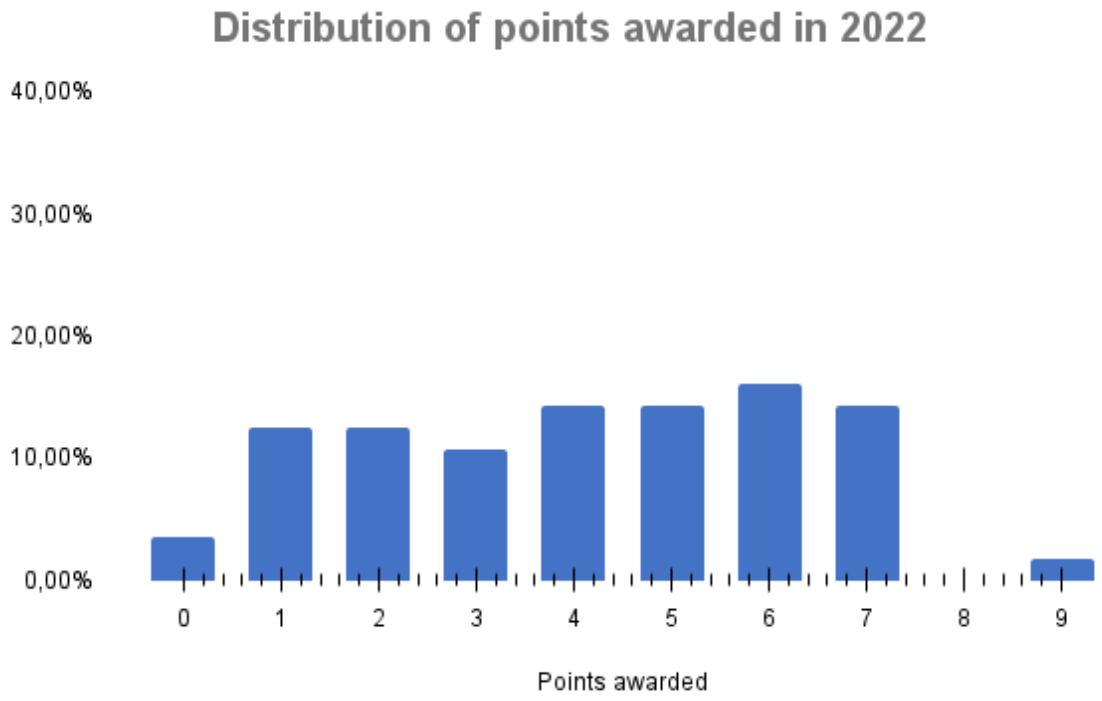


Fig 6.1: Innovation points awarded to CSC Version 2.1 projects in 2022

7 CONTINUOUS IMPROVEMENT

Continuous improvement of the CSC certification system, including its toolbox, is an important lever to improve the sustainability performance of CSC certified plants.

Valuable feedback was received in 2021 via an inquiry amongst internal CSC stakeholders, namely all RSOs and CBs, and an external stakeholder consultation event. Out of the feedback received in 2021, CSC certification system was enhanced in 2022 to

- include precast producers with external concrete supply;
- provide guidance on minimum requirements for documented quality- and health and safety management systems;.
- enable third party verified KPI reporting (sustainability report) on national association level;
- allow for labeling different levels of recycled aggregate content (update of R-Module).

In 2022, RSOs, CBs, plants undergoing certification and other stakeholders identified the following improvement potentials:

- Additional guidance on robust, yet feasible Sustainability Reporting would be helpful;
- Additional guidance on water scarcity assessment (tool) would be appreciated;
- Where possible, social criteria should be made more tangible and measurable;
- Guidance on specific indicators for KPIs which could be also included for the aggregates industry would be helpful;
- Transport criteria should clearly show which vehicles are included;
- Additional clarification should be provided on how newly commissioned plants are handled with regard to the chain of custody;
- The evidence requested should sometimes be listed or explained in more detail.

The CSC very much appreciated the feedback obtained which will help to provide additional guidance to plants undergoing CSC certification and to CBs in the context of validating evidence provided by their clients. The feedback will also help the CSC to reshape criteria in the next CSC certification system version.

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY BUNYAMIN CADIRCI (@BCADIRCI)

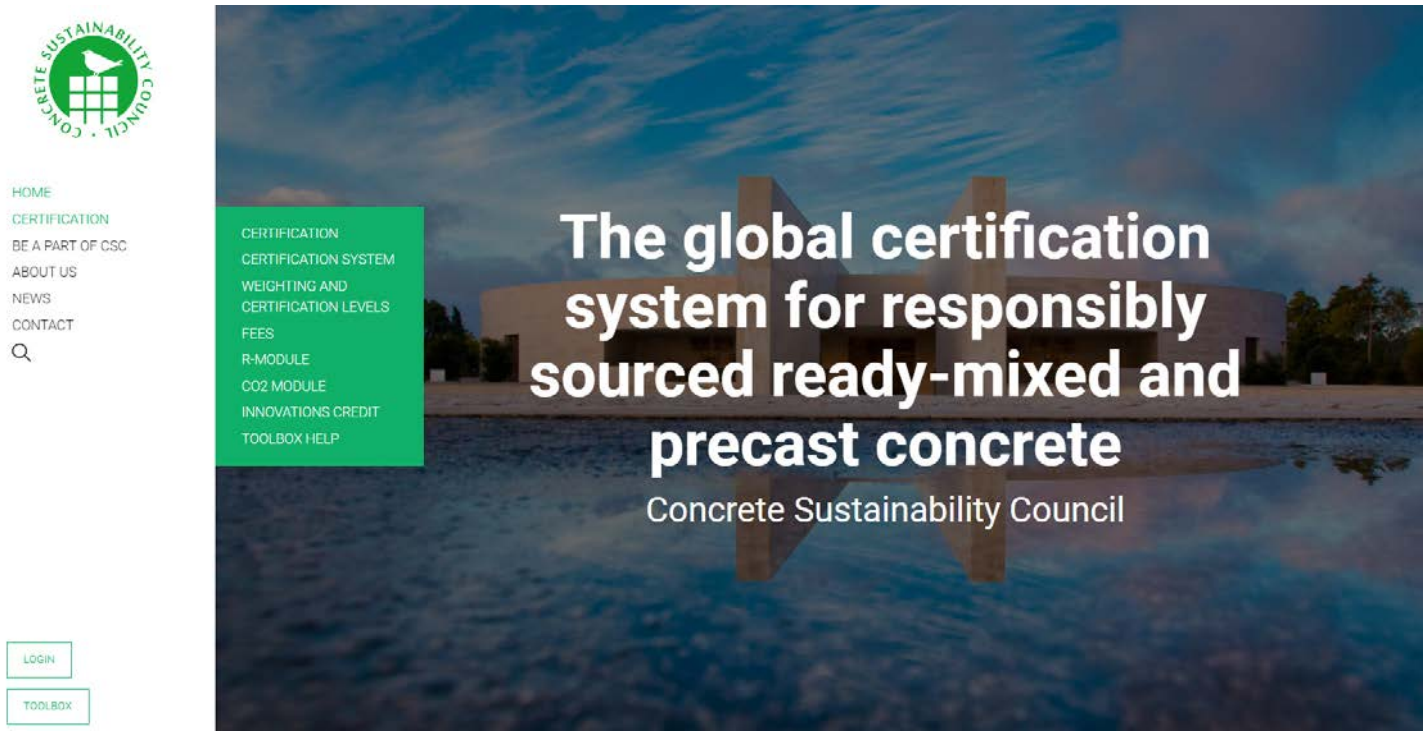
8 OUR WAY FORWARD

As part of the CSC continuous improvement process, a workshop on Biodiversity and Responsible Land Use was successfully conducted with the support of external experts. The workshop outcome will support to improve the applicability of the CSC certification credit “E6 Biodiversity”.

9 NEW WEB-PAGE

In order to make the Concrete Sustainability Council more accessible and an easier name to retain, we have switched our domain name from www.concretesustainabilitycouncil.com to www.csc.eco. This makes it easier for people to find us and retain the name of the CSC Certification.

We also changed the website’s design, to have a clearer, more modern website, where members and people interested in CSC certification can find the information easier. The new main website www.csc.eco will soon connect with the Regional System Operators’ aligned websites in the U.S, Latin America, Belgium, the Netherlands, Germany, Turkey and Italy.



WWW.CSC.ECO

10 GOVERNANCE STRUCTURE

The transparent and effective decision-making process is at the responsibility of the CSC's Executive Committee. Continuous involvement of a broad range of stakeholders is guaranteed through the dedicated Advisory Committee, which the CSC was able to establish in 2020 under the lead of Prof. Guillaume Habert, the Chair for Sustainable Construction at the ETH Zurich, together with distinguished experts from environmental and social stakeholder groups as well as leading green building councils. The Technical and Communication Committees with defined leadership ensure target orientated work.

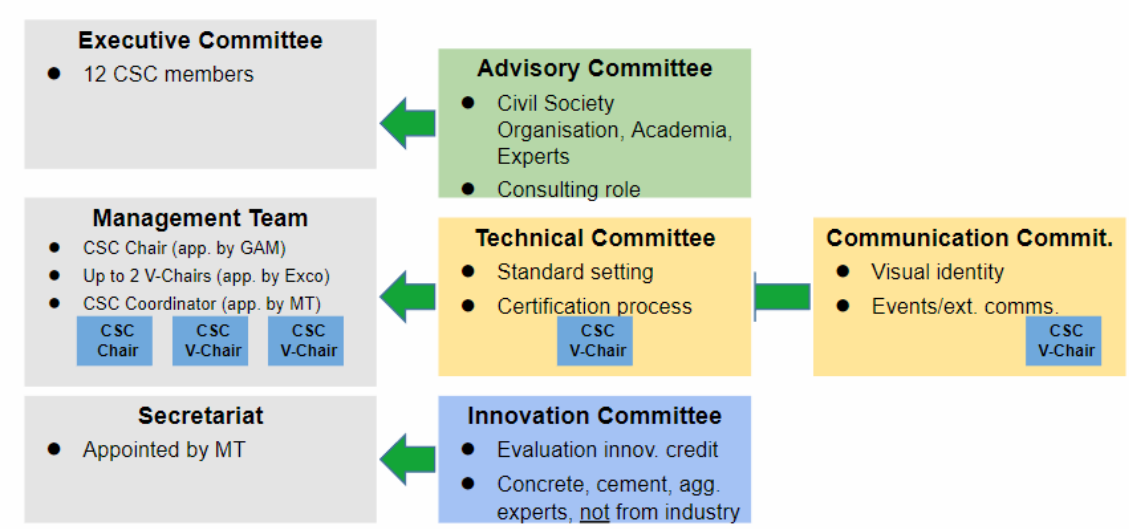


Fig 9.1: The CSC's Governance structure is shown in Fig 9.1

11 ABBREVIATIONS

- BREEAM Building Research Establishment Environmental Assessment Methodology
- CB Certification Body
- CSC Concrete Sustainability Council
- CSO Civil Society Organisation
- DGNB Deutsche Gesellschaft für Nachhaltiges Bauen – German GBC
- EMS Environmental Management System
- EPD Environmental Product Declaration
- GBC Green Building Council
- GBFS Ground blast furnace slag then goes into the abbreviation section 10
- GCCA Global Cement and Concrete Association
- HSMS Health and Safety Management System
- LEED Leadership in Energy and Environmental Design
- ÖGNI Österreichische Gesellschaft für Nachhaltige Immobilienwirtschaft - Austrian GBC
- QMS Quality Management System
- RSO Regional System Operator
- SDG Sustainable Development Goal

PICTURE FROM CONCRETE IN LIFE COMPETITION 2022 BY GCCA BY TIM GREEN (@THEGREENALBUM), BRISTOL, UK

CONCRETE SUSTAINABILITY COUNCIL

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