

Sensing Clues

2022 Annual Report

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PART A: GENERAL INFORMATION

1. Foreword of the President of the Board
2. Vision and Mission of Sensing Clues Foundation
3. Business Model
4. Key Activities in 2022
5. Governance
6. Statement of responsibility and confirmation of accuracy of the Annual Report

Highlights: Together with our outstanding Solution Partners, Employees and Volunteers, Sensing Clues provides nature conservation organisations with affordable and best-of-industry data-driven technologies to transform data into actionable information. In 2022 we were able to increase our funding with 133% and increase our impact, measured in protected hectares, with 326%.





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Foreword of the President of the Board

2022 was a year of consolidation and growth. We won a large Horizon Europe project, Nature FIRST, of which Sensing Clues was appointed coordinator. The project is aimed at tool-development for continuous biodiversity monitoring and proves to be a game-changer, as it raises Sensing Clues and its services to a next level.

Until mid 2022 Sensing Clues was driven by volunteers only. We're extremely happy that since September we have been able to fund our core-team. We welcomed 8 new Field Partners: [WWF Romania](#), [WWF Ukraine](#), [BAS](#), [DDNI](#), [3eData](#), [Carbon Tanzania](#), [Tin Tia](#) and [ORGIIS](#). To make the most of our support services we've organised on-site training sessions for rangers and community workers in Ghana, Madagascar, Kenya, South Africa, Tanzania, Romania, Bulgaria, and Spain. Due to the war, the training of our Ukrainian partners was online.

It is an honour to join forces with Field Partners from around the world, our outstanding Solution Partners, and the many Professionals that volunteer their expertise and time. To all of you, I extend my deepest thanks.

Dr. Jan Kees Schakel
President of the Executive Board





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Founded in 2015, Sensing Clues is now a respectful Foundation with 15 Solution Partners, 5 hired staff and some 40 volunteers, supporting Field Partner operations in 12 countries on 4 continents.



Vision statement

Sensing Clues believes that there is huge potential in using the power of data as a key-enabler to boost nature conservation.

Mission statement

Sensing Clues provides nature conservation professionals with affordable and best-of-industry data-driven methods and technologies to transform data into actionable information.

Overall strategic ambition

Turning wild spaces into safe havens

by providing cutting edge yet easy to use data-driven methods and tools for nature conservation and wildlife protection.



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Statutory purpose

The purpose of Sensing Clues is encoded in its Statutes as follows:

Article 2.1: The purpose of the Foundation is the development and provisioning of technologies, solutions and expertise to strengthen the protection, safety and security of nature, nature conservation areas, flora and fauna.

Article 2.2: The Foundation is realising its purpose by:

- Engaging organisations and individuals who want to contribute to the purpose by bringing in specialised knowledge, capabilities, technologies, and/or means;
- Designing and developing (technical and tactical) solutions which directly or indirectly contribute to the purpose;
- Raising awareness and providing training and support which directly or indirectly contribute to the purpose;
- Fundraising;
- And all other lawful initiatives and activities which directly or indirectly contribute to the purpose, in its widest interpretation.

Art. 2.3: The Foundation is not aimed at profit making.



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Our slogan

Turn wild spaces into safe havens!

Formal Non-Profit Status

Sensing Clues Foundation is a not-for-profit organisation, officially registered in the Netherlands as Stichting Sensing Clues with fiscal RSIN number 858159752 and registered at the Amsterdam Chamber of Commerce, number 70140707.

Sensing Clues Foundation is officially registered as ANBI (Public Benefit Organisation) by the Dutch tax authorities. An institution can be qualified as a Public Benefit Organisation solely when at least 90% of the institution's efforts are focused on the public good. It also provides a number of tax advantages to donors, and requires the foundation to comply with specific administrative and transparency requirements.



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Business Model

Core proposition

Sensing Clues helps nature conservation organisations with solutions and services to collect, store, integrate, and transform data from very diverse sources into actionable information.

Lowest possible cost of ownership (TCO)

We are able to provide these solutions and services at the lowest possible TCO through our network of Solution Partners and Professionals that volunteer their expertise, time, technical infrastructure, licences, and more.

How we finance the remaining costs

To finance operational costs and business development, we apply a subscription model, supplemented by projects and donations to fund the development of new functions, custom work, training and consultancy.





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Key Activities

To deliver our promise we engage in the following key activities:

- **Delivery of solutions & Innovation & continuous development** for data-driven nature conservation and wildlife protection.
- **Partnership & volunteer engagement** to maximise learning from our Partners and streamline collaboration towards best-of-breed solutions and services.
- **Marketing & communication** to make our solutions and services known and increase impact by supporting more nature conservation organisations.

Governance

In 2022 the Executive Board was formed by:

- Dr. Jan Kees Schakel, founder and President of the Executive Board
- Ir. Hugo Koopmans, Technology and Data Science
- Ir. Judith Dekkers, Operations Management





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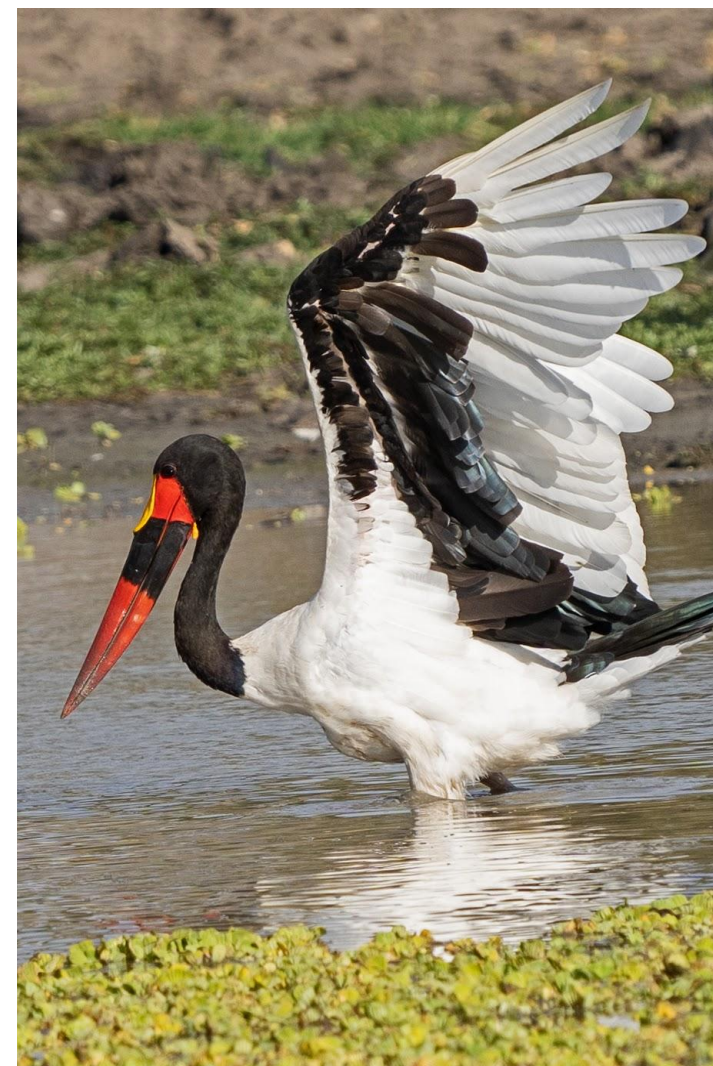
In 2022 the Supervisory Board was formed by:

- Sjouke Vrijburg, President of the Supervisory Board
- Dr. Harald Tepper

Claire Dussenbroek joined as the third member of the supervisory board in January 2023.

Except for the President of the Executive Board, all members are appointed for 3 year terms, which may be extended.

As of September 2022, Sensing Clues had 5 staff members. The foundation did not award any remuneration for volunteer work or board-related activities. See also Part D (*Financial Annual Report*) for an elaborate overview.





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Statement of Responsibility & Confirmation of Accuracy of the Annual Report

The Executive Board is responsible and accountable for the integrity of the Financial Statements of the organisation and the objectivity of all information presented in the Annual Report.

To the best of the Boards' knowledge and belief, we confirm the following:

- All information and amounts disclosed in this Annual Report are consistent with the WBTR and ANBI regulations of the Dutch Government. The report is complete, accurate and free of omissions.
- The Annual Report has been prepared in accordance with the guidelines as issued by the WBTR and ANBI regulations of the Dutch Government.
- The going concern basis has been adopted in preparing the Financial Statements. The Board has a reasonable expectation that the organisation will have adequate resources to continue its operations as a going concern for the foreseeable future.
- Management and employees operated within a framework requiring compliance with all applicable laws and maintenance of the highest integrity in the conduct of all aspects of the business, except where indicated otherwise in the Annual Report.
- The Executive Board is well versed of -and adheres to- its responsibilities as stipulated in the WBTR and ANBI regulations of the Dutch Government. Those responsibilities include, but are not limited to the following:
 - Establishing and maintaining an effective, efficient and transparent system of financial, risk management and internal controls.
 - Managing, including the safe-guarding of assets and for the management of the revenue, expenditure and liabilities of Sensing Clues.



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- Taking effective and appropriate steps to prevent irregular, fruitless and wasteful expenditure, losses resulting from criminal conduct, and expenditure not complying with the operational policies of Sensing Clues.
- Keeping full and proper records of the financial affairs of Sensing Clues.
- Preparation of financial statements for each financial year, in accordance with the WBTR and ANBI regulations of the Dutch Government.

In the Executive Board's opinion, the Annual Report and Financial Statements fairly presents in all material respects, the state of affairs of Sensing Clues, its business, its financial results, its performance against predetermined objectives for the reported year and its financial position as at the 1st of January of this year.

Signed:

The signed version of this document can be retrieved
upon request via hello@sensingclues.org

Dr. Jan Kees Schakel

Founder and President
of the Executive Board

Sjouke Vrijburg

President
of the Supervisory Board

Harald Tepper

Member
of the Supervisory Board

Claire Dussenbroek

Member
of the Supervisory Board

July, 2023.



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PART B: IMPACT INFORMATION

1. Impact
2. Overview of our Field Partners and how we support their mission
3. Quotes from Field Partners
4. Investments in 2022

Highlights: Sensing Clues reaches its impact through its Field Partners. We are successful when their nature conservation efforts are strengthened and amplified through the solutions and services that we provide. In 2022 we were able to expand our network of Field Partners from 9 to 15, increasing the total protected area with 326%.





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Impact




To assess our impact we use two categories of quantitative indicators: **Scale** (to give an indication of our reach) and **Investments** (to indicate how much resources we were able to mobilise). A third and most important category is qualitative in nature. It describes the **outcome** of all our efforts through the eyes of our Field Partners.

Indicators of Scale	2019	2020	2021	2022
No. of continents	3	3	4	4
No. of countries	3	6	7	13
No. of supported nature conservation organisations	3	7, +130%	9, +29%	15, +167%
No. of protected species*	68	82, +21%	109, +32%	306, +280%
No. of hectares protected (x 1000)	385	563, +46%	984, +75%	3.211 +326%
No. of Cluey users (rangers)	29	101, +348%	179, +77%	322, +180%
No. of recorded tracks and observations	1.703	26.396	26.100	53.531
Indicators of Investment				
No. of Solution Partners (in-kind value)	15 (n.m)	15 (406k)	15 (305k+)	15 (308k)
Approx. no. of Volunteers	35	40	40	40
No. of trainings (and training days) given	1 (5)	2 (10)	4 (32)	11 (69)
Nett revenue (subscriptions, projects, donations and grants [2022 only])	55.451	73.063, +32%	104.401, +43%	242.985, +133%







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Overview of Field Partners and how we support their mission

	<p>The mission Of Les Anges Gardiens De La Nature (AGN) is to recruit and train eco-guards in Burkina Faso to manage and develop wildlife protection areas, accompany visitors for sightseeing and hunting, participate in ecological monitoring, awareness creation among members of the local community, take part in patrol and anti-poaching operations.</p> <p>Sensing Clues started supporting AGN in 2020 in the area of law enforcement in protected areas. In 2022 the support was extended to encompass community work.</p>
	<p>The Bulgarian Academy of Sciences (BAS) is the top scientific organisation of Bulgaria. It has 68 institutes, laboratories and other research units which carry out basic and applied research in the fields of the natural, technical and social sciences and the humanities. BAS is Field Partner in the Nature FIRST, making full use of the Sensing Clues platform.</p>
	<p>The Black Mambas, an initiative of Transfrontier Africa, is an all-female non-armed ranger team, protecting rhinos in the Balule Nature Reserve, which is part of the Greater Kruger National Park.</p> <p>The Black Mambas are using all available tools of Sensing Clues to monitor and protect rhinos in Balule Nature Reserve.</p>






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	<p>Carbon Tanzania is a social enterprise that has overturned conventional landscape conservation in East Africa with its innovative, business approach to protecting forests and wildlife. They help to make conservation an economic imperative for people, who need to see tangible benefits from efforts to protect their natural resources.</p>
	<p>CSI Wildlife helps conservationists and wildlife projects in need by assisting in wildlife forensics and investigations and by providing and coordinating volunteers to assist with wildlife projects. CSI Wildlife uses all available tools of Sensing Clues.</p>
	<p>The Danube Delta National Institute for Research and Development (DDNI) was established in 1970 and its main objective is conducting fundamental and applied research for scientific support of the management of the Danube Delta Biosphere Reserve (DDBR) and other wetland areas of national and international interest, with particular focus on biodiversity conservation and sustainable use. DDNI is Field Partner in the Nature FIRST, making full use of the Sensing Clues platform.</p>
	<p>Beautiful creatures such as the rhinoceros and elephant have long been targets of poachers; the rhinoceros for its horn and the elephant for the ivory in its tusks. These are only two examples of the many species in Africa that are reaching near-extinction. IAPF develops and supports programs to stop poachers from targeting and killing these endangered animals. IAPF uses all of Sensing Clues' tools to support its operations.</p>



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	<p>The mission of Elephants Alive is to ensure the survival of elephants and their habitats, and to promote the harmonious co-existence of elephants and people.</p> <p>Elephants Alive participates in a large consortium led by Sensing Clues to develop digital twins to mitigate and prevent human-elephant conflicts and thus stimulate peaceful human-elephant coexistence (proposal stage).</p>
	<p>Spanning more than 85,000 square km (an area the size of Portugal), the Vale do Javari is home to 7,000 Indigenous People, including the largest population of uncontacted people in the entire Amazon. Not only is the Javari an area of tremendous environmental value, it is also of incomparable cultural importance.</p> <p>The mission of the Jarvari Project is to understand and identify the current threats to the environmental and cultural assets of the Vale do Javari and implement the best methods to support the preservation of the region's cultural and environmental value.</p> <p>In 2021 Sensing Clues conducted a baseline study to understand and identify the current threats to the environment. Since then, we have been working with Celine Cousteau and Tadzio to prepare phase two of the project: co-design and implement measures to protect the Vale do Javari.</p>
	<p>Nitidæ's mission is to design, develop and lead projects that preserve the environment while contributing to the local economy. With an operational team of 100 people (economists, engineers, agronomists, forestry specialists, geographers, soil carbon scientists, GIS and remote sensing experts), Nitidæ is currently conducting approximately fifty projects mainly in Madagascar, Burkina Faso, Mozambique and Ivory Coast.</p> <p>In 2021 collaboration with Sensing Clues was started to support their work in Madagascar.</p>





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	<p>ORGIIS' mission is to reduce poverty through sustainable use of resources. ORGIIS aims to leverage appropriate indigenous knowledge to overcome the challenges of underdevelopment, good governance, entrenched poverty, climate change and environmental degradation in the SADA zone. By adopting a multi-sectoral approach, ORGIIS Ghana has contributed to sustainable local development by using formal knowledge in the fields of agronomy, extension, anthropology, sociology, economics, conservation, and ICT for development coupled with indigenous knowledge to ensure high impact and enhanced interventions on the socio-economic transformation of its target populations in local communities.</p> <p>Sensing Clues started supporting the work of ORGIIS in 2022.</p>
	<p>PAMS mission is to empower the people who protect wildlife and wild places. Through trusted partnerships with communities, local and national government, key stakeholders and champions in the various landscapes in which they operate, PAMS uses intelligent approaches to seek flexible solutions that address the most pressing challenges faced by wildlife and people living in natural areas.</p> <p>Sensing Clues is supporting the work of PAMS since 2020.</p>
	<p>Wildlife Works is the world's leading REDD+ program development and management company with an effective approach to applying innovative market based solutions to the conservation of biodiversity. Their approach is biodiversity-driven, community-centred and ecosystem-based. The development and sales of nature-based credits enhances forest communities economic self-determination to transition from extraction-based to conservation-based livelihoods.</p> <p>Sensing Clues has supported the wildlife security teams of Wildlife Works since 2018.</p>



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	<p>WWF is one of the world's leading conservation organisations. They collaborate with local communities to conserve the natural resources we all depend on and build a future in which people and nature thrive. We conducted a project evaluation for WWF Netherlands. WWF Romania and WWF Ukraine are Field Partners of Nature FIRST.</p>
	<p>3eData is a technology-based company that offers engineering solutions based on the collection and analysis of environmental data. Within Nature FIRST we work together on the development of a semi-automated habitat mapping system, based on the classification of satellite and drone images in combination with ground-truth collected with our Cluey Data Collector.</p>



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Selection of Quotes from our Field Partners

“We are now really well equipped for the difficult task we are entrusted with”

Bruno, Police, Les Anges Gardiens de la Nature

“They help us to make great conservation impact”

Michele, Director, PAMS Foundation

“The tool suite is really world class”

Greg, Operations Manager, Chengeta Wildlife



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PART C: COLLABORATIVE TEAM EFFORTS

Investments in 2022

Flagship tools

The following applications are the flagship tools of Sensing Clues:

- the **Cluey** Data Collector & Tracking app,
- the **Focus** Data Explorer for Command Centres, and
- **WildCAT** (Wildlife Crime/Conservation Analyst Toolbox).

As most (if not all) our Field Partners deeply engage with local communities to live in harmony with nature, we developed a Community Work module. It allows them to track efforts and activities and assess their impact. Moreover, to give third-party developers full access to the power of our platform, we've expanded our WildCAT analytical toolbox with full-featured API-functions for R-Studio and Python.





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Nature FIRST (Horizon Europe)

Funded by the European Commission, Nature FIRST is developing preventive capabilities for nature conservation by combining ecology sciences and environmental forensics with environmental observations (satellite-based and on-site). The goal of Nature FIRST is to develop predictive, proactive and preventative capabilities for nature conservation stakeholders by combining theoretic premises from the sciences of ecology and environmental forensics with empirical environmental observations (satellite-based & on-site) into a Proof of Principle that is tested and demonstrated in 4 European areas, covering 6 biogeographical regions.

Other activities in 2022

- The “Friday morning Data Science Sessions”, started in 2021 are a great success. They are open to all our Field Partners and volunteers who want to work on their own projects, such as the creation of reports, maps or models. Sensing Clues’ experts, ranging from ecologists to data scientists and computer engineers take part to provide technical or methodological advice and hands-on help.
- We’ve concluded the evaluation assignment of the Forest Foresight project of WWF Netherlands.

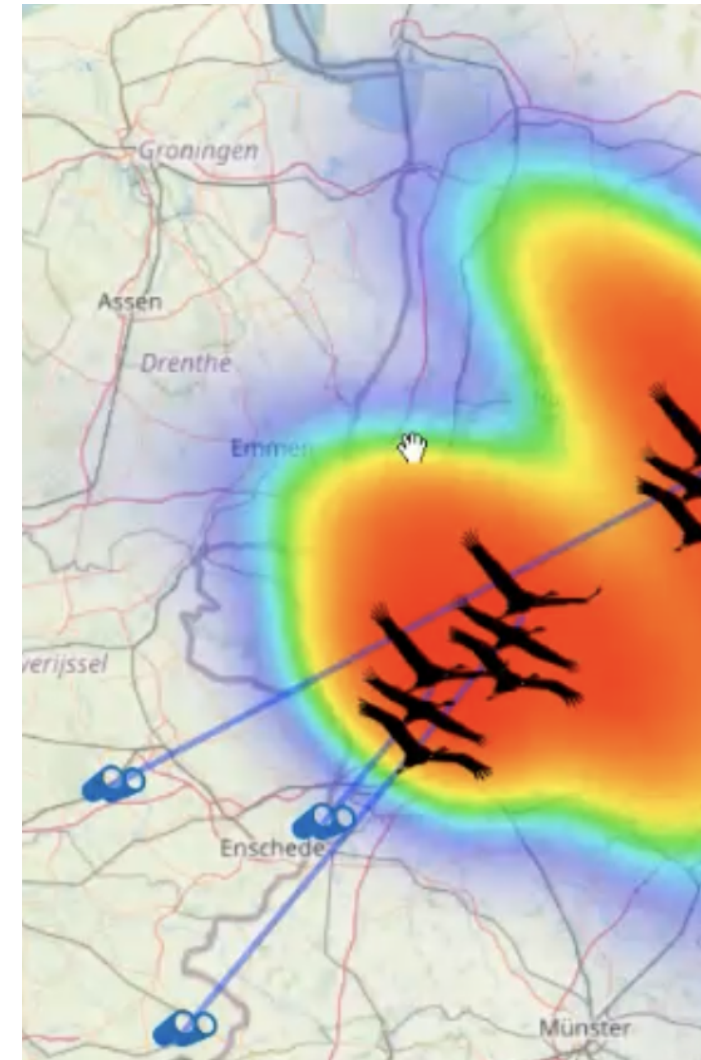


NATUREFIRST



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- We launched the Crane Radar, the first ever digital twin of an ecological phenomenon.
- With help of the WNF INNO Fund we've integrated Cluey with MyPlanet.green and successfully supported subsequent field trials.
- We contracted NewRelic as a Solution Partner and started building monitoring routines to monitor all services that are running on our servers and to detect and solve possible issues early.
- We also contracted BlockBax, enabling us to create and execute advanced real-time analytics on (IoT) sensor data, such as elephant GPS-trackers.
- Speech delivered for World Rainforest Day
- We continued our successful Outreach Programme. In this programme, staff of Sensing Clues visit Field Partners for prolonged periods to build strong partner relations and expand our network. By learning from each other we can tune our expertise and investments to finetune our solutions and services and develop new ones where needed. Amongst Judith and Jan Kees we spent 17 months with partners in the field.





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Solution Partners

All these efforts and investments would not have been possible without the active participation of our Solution Partners and our large network of professionals that volunteer their time to support our mission.

SOLUTION PARTNERS (in alphabetical order)	
	<p>Baker McKenzie is an international law firm with 77 offices across 47 jurisdictions and 13,000+ employees. The firm advises companies on all legal and tax aspects, offering integrated solutions for a connected world. Baker McKenzie is a signatory to the UN's Global Compact, the largest corporate sustainability initiative, and we are committed to applying our legal knowledge for the public good through pro bono advice.</p> <p>We were impressed by the combination of Sensing Clues' idealism and their smart, technologically advanced solutions when we entered into a long-term relationship with the organisation in 2018. Over time, we have had the pleasure of seeing many of their plans materialise and their organisation grow. Sensing Clues' holistic approach paired with data-analytics has enabled the organisation to develop pragmatic solutions to global issues. In our view, this really sets them apart from other organisations with a similar mission.</p> <p>By providing expertise in areas like commercial contracts, tax, employment, corporate governance and data privacy, we help the organisation stay compliant so they can focus on their core activities. We are confident that Sensing Clues will have a direct, sustainable and positive impact on nature conservation and wildlife protection.</p>





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	<p>At BIT, we specialise in providing (green) colocation, internet connections, managed hosting, and outsourcing services to cater to the needs of corporate internet users. Our goal is to offer quality-conscious organisations a solid foundation of IT and internet infrastructure that meets their requirements.</p> <p>We recognize the vital work that Sensing Clues undertakes in the field of global nature preservation. Understanding their complete reliance on donations, we extend our services to them free of charge, supporting their mission with our expertise.</p> <p>The Sensing Clues platform, which consolidates data from various sources, operates seamlessly on our highly redundant hosting platform. This infrastructure ensures the efficient processing and management of the diverse data streams that flow into the Sensing Clues.</p>
	<p>In 2022, Blockbax joined as Solutions Partner. Blockbax is a fully configurable & scalable cloud IoT Platform in which the data of any type of sensor or machine can be connected, without programming. This allows business experts like field operations, to combine & visualise data, configure real-time analytics and triggers to any person or system, without writing a line of code.</p> <p>Blockbax is committed to using its IoT platform for the betterment of society. We believe our technology should not only benefit organisations that monetize on it, but also those who are working towards social good. With our platform, Sensing Clues can monitor data from any type of sensor and/or other time series related data, protect wildlife habitats, alert the right people & communities and gather important data about animal behaviour & migration patterns. That's why we proudly support Sensing Clues in their mission in turning wild spaces into safe havens.</p> <p>Sensing Clues has access to the complete capabilities of Blockbax' fully configurable and scalable</p>





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	<p>Professional edition IoT platform, enabling them to effectively monitor and safeguard wildlife habitats.</p>
	<p>Dataiku is a leading AI and data analytics platform that empowers enterprises to accelerate their digital transformation by enabling them to integrate AI and data-driven insights into their operations and processes. Ikgig.AI is Dataiku's AI for Good program, enabling NGOs to use Dataiku for NGO's mission through volunteering activities or use Dataiku for their D,E&I & Climate action.</p> <p>By embodying tech-enabled collective intelligence for positive impact, Sensing Clues demonstrates the power of embedding AI in everyday operations, contributing to the protection of over 3 million hectares of nature.</p> <p>Sensing Clues highlights the paramount connection between restoring biodiversity and advancing social justice for rangers and their communities. It is, in our experience, a rare and crucial mission of Climate Justice which we care deeply about to help advance.</p>
	<p>DIKW Intelligence is a consulting firm that helps customers in data-driven value creation. Our knowledge and expertise is in the domain of data science, data warehousing and artificial intelligence. We work for SME companies and serve as a partner to gain strategic advantage with data. Besides projects we deliver data science and data engineering training and our services label Bluemine Intelligence delivers data logistics as a service.</p> <p>We were here from the start, as we successfully delivered a realtime big data platform for Jan Kees when he asked us to participate. The technology we develop for Sensing Clues is closely related to our field of expertise and the Sensing Clues purpose is right so for DIKW to invest in this technology is a win-win. We strongly believe that technology is an essential for nature conservationists to keep up and battle those who</p>





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	<p>have a different perspective on the value of nature.</p> <p>DIKW Intelligence delivers technical expertise and support to the Sensing Clues organisation in the form of providing her 1 day per week free usage of the CTO office. Sensing Clues hosts the weekly meetings in our office in Nieuwegein and we work on deep learning and Artificial Intelligence solutions, the SERVAL sound sensor in particular. Furthermore we monitor and keep an eye on all systems running.</p>
	<p>Functional Analytics is a software company focused on data science and advanced analytics. Our core product is ownR™, a platform for DevOps automation and productionization of analytics solutions with a focus on the comfort of the non-technical end-users.</p> <p>Functional Analytics supports Sensing Clues Foundation because we believe in a data-driven approach for improving the world, and the life of wildlife in particular. Sensing Clues' mission has spoken to us from the first time we heard about it and we are a dedicated supporter of her vision. The fact that our tooling can contribute to that work and that it enables more people to volunteer their time and talent is a source of pride for us indeed..</p> <p>Functional Analytics is the platform behind WildCAT. It provides the necessary licences and consultancy services on a pro bono basis.</p>
	<p>Mapbox is a mapping and location cloud platform for developers. We're the building blocks; the SDKs and APIs for developers and designers to build real-time location awareness into their apps.</p> <p>Location technology for conservation —monitoring, planning, protecting, and advocating for our planet— is improving fast. It's essential these tools are designed to be accessible and inclusive, contributions that help conservationists and local communities act more quickly and responsibly. For this reason, we are proud to</p>






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	<p>support Sensing Clues and their suite of wildlife tools that provide high quality tools at low cost to people who can immediately use them to improve conservation activities.</p> <p>Mapbox provides Sensing Clues with the full power of their platform.</p>
	<p>MarkLogic helps organisations to integrate data for both analytical and operational applications. The software platform is being used primarily within Government, Banking & Insurance companies.</p> <p>Providing Sensing Clues with the Marklogic data integration platform & supporting this with resources to help build both operational & analytical applications is our way to help preserve nature and biodiversity. Our employees that hands-on help Sensing Clues find it also a personal mission to prevent wildlife from becoming extinct and therefore support the cause also in their personal time.</p> <p>MarkLogic provides Sensing Clues with the MarkLogic data platform as a back-end for analytical & operational applications. In addition, it provides resources to help build the applications.</p>
	<p>NewRelic helps organisations to respond faster, optimise better, and build more perfect software, monitoring your entire stack on a single platform.</p> <p>Through its social responsibility programs, NewRelic is committed to supporting not-for-profit organisations who are working tirelessly on the biggest challenges of our day. Next to access to New Relic One, employees volunteer to help Sensing Clues with scoped technical projects to ensure optimal use of New Relic One.</p>



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	<p>The Semantic Web Company supports companies in mastering the challenges of information management through intelligent data enrichment and analysis using Knowledge Graphs and Semantic AI.</p> <p>We are proud to support Sensing Clues in the development of their data-driven methods and technologies for nature and species conservation. Even though the PoolParty Semantic Suite and its graph-based technologies only increase data quality and accuracy by a few percentage points, we have already achieved one of those successes that has always been the driving force of the Semantic Web Company and part of its vision: Helping people and organisations transform their data into valuable knowledge so that our jobs, our products, and ultimately our planet remain valuable and livable.</p> <p>Our contribution to Sensing Clues is our technology stack, PoolParty Semantic Suite(tm), and our ISO-certified cloud infrastructure.</p>
	<p>SmarterVision is a computer vision and deep learning product company, with a large footprint in social solutions. SmarterVision supports Sensing Clues on a voluntary basis for about four years.</p> <p>We like to have social impact and what better way is there then helping Sensing Clues with the mission of wildlife preservation.</p> <p>With current scientific knowledge in the field of computer vision we have helped Sensing Clues with the CaiMan, human-in-the-loop, solution. We have contributed a mutual code-base for annotation, GPU power for training vision models and hosted this year's camtrap Kaggle competition.</p>
	<p>Vantage AI is a data-science consultancy that offers innovative, flexible and highly motivated talent.</p> <p>We as Vantage AI and Bigdata Republic have been supporting Sensing Clues on a voluntary basis for a</p>



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	<p>number of years now. The social aspect appeals to us and the consultants and we like to contribute in this way.</p> <p>Together with Sensing Clues, Vantage AI developed a deep learning algorithm for detecting and classifying animals in camera trap images.</p>
	<p>Wageningen University and Research (WUR) is a world-renowned research institute known for its high quality and high impact research on the environmental and life sciences. WUR invests heavily in AI and Digital Twins to improve the quality of life.</p> <p>Working with Sensing Clues is a great way to bring impact to the world of nature conservation!</p> <p>We do this by contributing fundamental ecological and conservation knowledge, and state-of-the-art modelling techniques.</p> <p>Among others we are working on Bayesian models and Digital Twins that give insight into the habitat quality and conservation status of endangered species.</p>



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Impressions of our Volunteers

SELECTION OF QUOTES FROM OUR VOLUNTEERS

Chiel Bakkeren - Data Scientist. As a mathematician/data scientist (professionally) and nature guide (in my spare time) I can combine my two passions by helping Sensing Clues to attain their goals. I also like the fact that Sensing Clues partners with organisations that aim to empower local people to protect wildlife and wild places.

Emil Zegers - GIS Specialist. I'm volunteering with Sensing Clues because I believe in working together to make the world a better place step by step, and I know that Sensing Clues and all of its cooperation partners and customers care for that same goal.

Geert Josten - Full Stack Developer. I believe we as humans have a responsibility towards nature, with wildlife, rainforests, and reserves in specific. How better to help than by simply doing what you are good at, which in my case is doing full-stack development with knowledge about Linux, Docker, JavaScript, Frontend development, and MarkLogic database.

Gijs Kloek - Forest and Nature Conservation Specialist. I joined Sensing Clues because I'm passionate about wildlife and I believe technology can and will play an important role in its conservation. Being equipped with the right tools in the field makes a big difference. As part of the marketing and communication team I help Sensing Clues in telling our story.

Madelon van Hout - Criminologist. The conservation of biodiversity is one of the most pressing issues of our time. Sensing Clues' unique approach is to provide those already active in the field with cutting edge technology, taking operations to a whole new level. It is exciting to be part of this journey. In the last 2+ years I have helped build the curriculum of the Sensing Clues Academy, provided training in the field, worked on threat assessments for protected areas and on spreading Sensing Clues' message to those that may benefit.



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Nicolas Nelson - Frontend Developer. Sensing Clues has a can-do approach to nature conservation and wildlife protection. I strongly believe this mindset combined with their technological know-how allows them to make a real impact. By supporting them with the development of the Cluey app and Focus I hope to make a positive contribution to their mission.

Shehana van Golen - Social Media Marketer. Coming from Sri Lanka, nature and wildlife play a close part in my life. I am always looking for ways to contribute to a better planet and came across Sensing Clues. The work Sensing Clues does have a direct impact, and by working for them, I can witness it daily. I help Sensing Clues with their social media related work by creating awareness for the great work at Sensing Clues through social media channels.





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Outlook 2023

In **2023** the total sum of investments are projected to increase significantly.

We will continue to strengthen our flagship tools, based on functional requests from field partners. This will include (but not be limited to) seamless integration of customer-defined data entry lists and map layers, advanced real-time analysis of GPS-tracking data (such as elephant and bear collars) and camera-traps footage for biodiversity monitoring.

With the **Nature FIRST** project we'll work on methods and technologies to monitor biodiversity continuously and, where possible, in real-time. To this end we'll invest in the development of digital twins, which are kind-of digital copies of protected areas in which we can model and predict for example human-wildlife conflicts with elephant and bear (and thus, prevent them), assess the conservation status of protected areas, and assess the management effectiveness of conservation and protection measures.





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PART D: FINANCIAL ANNUAL REPORT

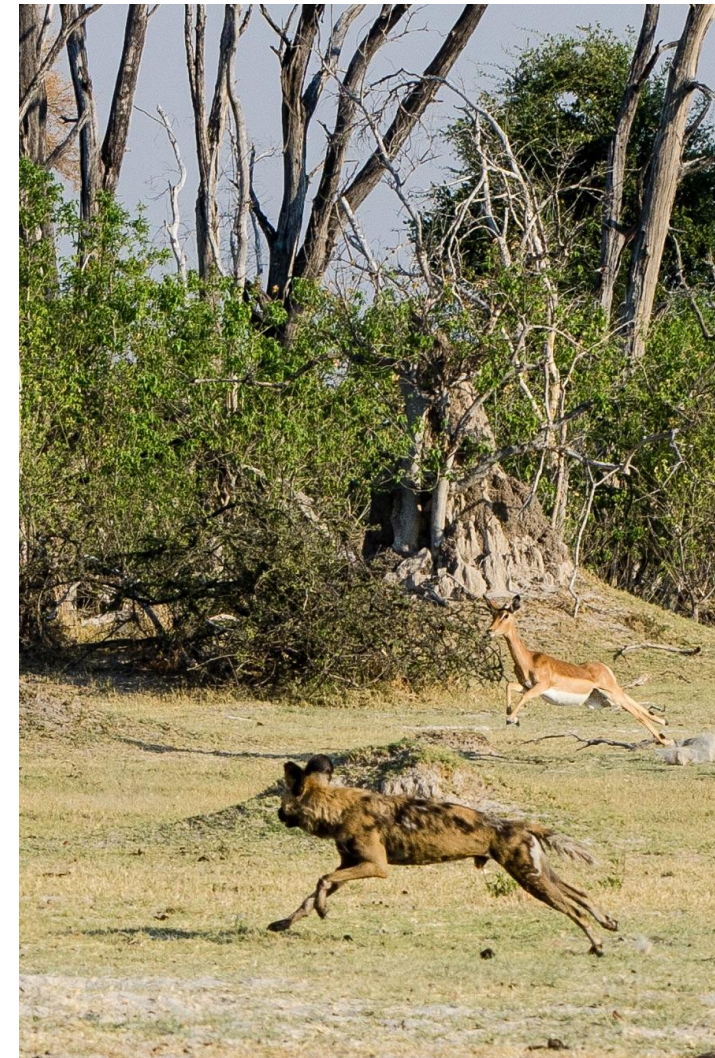
1. Financial Performance
2. Financial Statement

Highlights: In 2022 our net turnover has grown 126%. Of the net turnover, 96,8% was invested in our mission. 88,6% directly for technology development, training and support for nature conservation and wildlife protection. 8,2% were costs related to acquisition of (intended) field partners. The general overhead remained at 3,2%.

Financial Performance

At Sensing Clues we aim at:

- 1) Delivering our solutions at lowest possible Total Cost of Ownership (TCO).
- 2) Strengthen the core development and support team.
- 3) Keep overhead below 5%.
- 4) Remain independent.





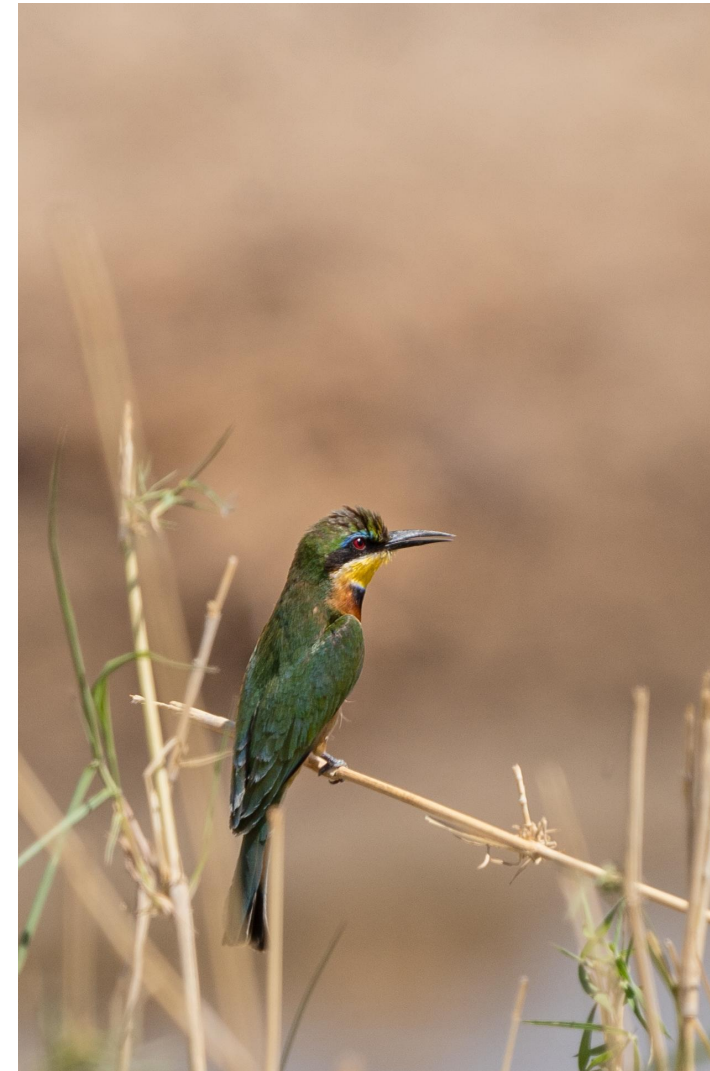
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This is how we are able to sustainably provide our services at the lowest possible total cost of ownership (TCO):

- All software and hosting services are delivered for free, as all underlying costs are covered by our Solution Partners and Volunteers.
- As all tools can be explained and used within an hour or two, training costs are extremely low. When we conduct field training, most of the time spent is to learn from each other and to lay the foundation for further collaboration.
- Optional subscription fees are used to cover the costs of development and support that cannot or hardly be delivered by Solution Partners or volunteers.
- The efficiency-gains made by Field Partners are manifold. These vary from reduced (till zero) hosting and data storage costs, to a significantly reduced need for technical specialists.

In addition to the ca **308.000 Euro in-kind** contributions of our Solution Partners and the priceless inputs of our network of professionals that volunteer their expertise and time, Sensing Clues received **242.986 Euro**:

- Annual subscriptions: **27.465 Euro**
- Training and projects: **47.740 + 166.515 Euro**
- Donations: **1.266 Euro**





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European Commission Grant: 2.463.933 Euro (75% down-payment)

- Sensing Clues, part 2022: 166.515 Euro (see previous page)
- Sensing Clues, part 2023 - Sept. 2025: 939.830 Euro
- Dedicated for Consortium Partners: 1.357.588 Euro

Investments in Sensing Clues' Mission

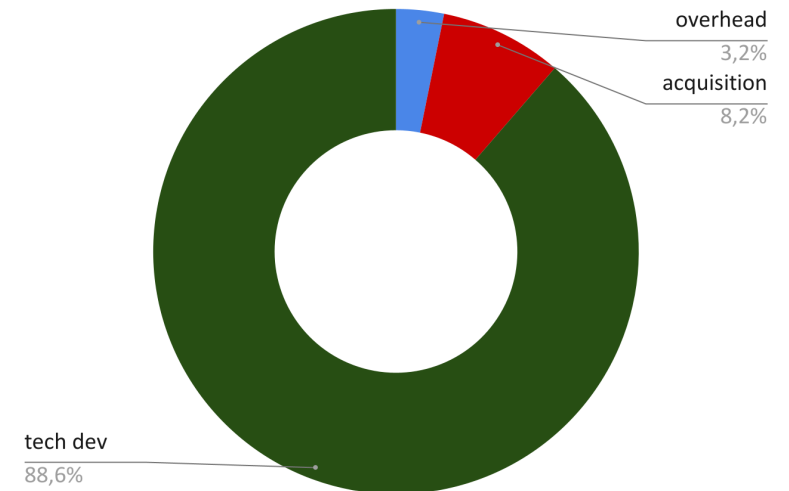
The following investments were made in 2022:

- Tool suite development, incl. project remuneration: **145.482 Euro**
- Training and consultancy (Nitidae, AGN, Wildlife Works): **32.513 Euro**

Acquisition and Overhead

Acquisition costs were **16.405 Euro**, covering almost exclusively of travel and accommodation related to 17 months of visits to our Field Partners (77% funded by projects). These visits were aimed at deepening our understanding and relationship with our existing field partners, and to contact potential partners in the region.

The total overhead in 2022 was **6.385 Euro**, which was **3.2%** of all expenses (licences for e.g. Telephone, Banking, Website hosting, Deepl, Donation services Mollie and accountancy).





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Financial Statement

Company profit and loss account for 2022

	2022	2021
	€	€
Revenue		
Net turnover	2.540.404	104.041
Purchase value	2.394.042	87.685
Gross margin	146.362	16.356
Costs		
Depreciation costs	5.040	5.040
Wages and salaries	73.880	-
Other personnel costs	2.451	-
Acquisition costs	16.405	3.215
General costs	5.497	4.471
	103.273	12.726
Operating result	43.089	3.630
Financial income and costs	- 888	- 363
Result from business operations	42.201	3.267
Taxes	-	-
Result from business operations after taxes	42.201	3.267
Result after taxes	42.201	3.267





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Remuneration of the Executive Board

The Supervisory Board has adopted the remuneration policy, the level of management remuneration and the level of other remuneration components. The policy is updated periodically. The last review was in 2022.

All Executive Board Member-tasks are unpaid.

In determining the remuneration policy and setting the remuneration, Sensing Clues follows the Regulation on Remuneration of Directors of Charitable Organisations (see www.goededoelennederland.nl).

The regulation provides a maximum standard for annual income using weighing criteria. Project-based activities are remunerated. The weighing of the situation at Sensing Clues was done by Sensing Clues' Supervisory Board. This resulted in a so-called BSD score of 334 points (1 FTE/12 months, BSD January 2022). The remunerations remained within the applicable maximums. Moreover, the taxed allowances/additions, employer's pension contribution and other term remuneration were in reasonable proportion to the annual income.



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List of Acronyms

AI	Artificial Intelligence
ANBI	ANBI (Algemeen Nut Beogende Instelling) is the non-profit tax designation in the Netherlands issued by the Tax Office (Belastingdienst) in accordance with the general tax laws (Uitvoeringsregeling Algemene Wet Rijksbelastingen 1994).
FTE	Full Time Equivalent
HVCS	High Value Conservation Species
HWC	Human-Wildlife Conflicts / Coexistence
KPI	Key Performance Indicators
Nature FIRST	Forensic Intelligence and Remote Sensing for Biodiversity Monitoring
WBTR	Wet bestuur en toezicht rechtspersonen (Administration and Supervision of Legal Persons Act)
WUR	Wageningen University and Research

