IPIS

Open data dictionary - Artisanal mines in the DR Congo

Last update: 2026-10-23
Table: cod_mines_opendata (previously cod_mines_curated_all_opendata_p_ipis)

General information

The dataset columns are of one of the following data types:

- **integer**: A whole number.
  (for example: 5)
- **numeric**: A real number.
  (for example: 7.54)
- **date**: A date in YYYY-MM-DD format.
  (for example: 2025-04-03)
- **text-free**: A text field that may take any value. If this field takes multiple values, they are separated by commas.
  (for example: Camp Limboloko, Takulamaku)
- **text-single**: A text field that may take **a single value** from an established list of options.
  (for example: approx)
- **text-multi**: A text field that may take **multiple, space-separated values** from an established list of options.
  (for example: pits underground hydro)

Each of these columns may also take on the value NULL. This indicates one of the following situations:

- The question was not (yet) included in the version of the mine questionnaire administered by the research team.
- The question was not asked because it is not relevant. For example: questions about the use of mercury are only asked at mines where gold is extracted, questions about child labor are only asked when children are present.
- The research team did not have sufficient information to answer the question.
- The topic of the question is absent. For example: if only one mineral is extracted at a mine, the questions about the second and third minerals will be NULL.

Dataset-specific information

The table below lists, by topic, the different columns that are present in this dataset. It describes, for each column:

- Its data type.
- What question or topic it contains information about.
- (when applicable) Which values the column may take, and what each of those values mean.

The columns with information about minerals, armed groups, and state services appear multiple times, because more than one of them may be present at a single mine. Because of this, the related column names start with an abbreviation and a number:

- **Minerals**: m1 (the primary mineral), m2 (the secondary mineral), and so on.
- **Armed groups**: ag1 (the first armed group), ag2 (the second armed group), and so on.
- **State services**: ss1 (the first state service), ss2 (the second state service), and so on.

As the multiples of these columns follow the same structure, they are explained only once in the table below with an X in place of their ordinal. For example, the table entry of agX_type applies to columns ag1_type, ag2_type, and ag3_type.

Column name	Data type	Description	Comment and possible values
id	integer	A unique identifier of the mine visit.	
1. Visit			
source	text-single	The actor that carried out the mine visit.	Possible values: • **ipis**: The visit was carried out by an IPIS research team, using our methodology as described on the open data page. • **thirdparty**: The visit was carried out by a third party, using their own methodology. The accuracy and consistency of the data may therefore differ from those of IPIS's surveys. In this case, we also set novisit_reason = thirdparty.
pcode	text-free	The internal unique IPIS identifier of the mine.	Format: codmineXXXXX Repeated visits to the same mine use the same pcode.
name	text-free	The name of the mine.	
visit_date	date	The date on which the mine was visited.	Format: YYYY-MM-DD
visit_onsite	integer	Whether the research team physically visited the mine.	Possible values: • **1**: Yes, data was collected at the mine. • **0**: No, data was collected remotely, for example from a nearby village.
novisit_reason	text-multi	The reason why the research team was unable to physically visit the mine.	This column is only relevant when visit_onsite = 0 or when source = thirdparty. Possible values: • **distance**: The mine was located too far away. • **inactive**: The mine was no longer active. • **insecure**: The security situation at or near the mine was too dangerous. • **roadblock**: A roadblock prevented access to the mine. • **roadcondition**: The condition of the roads prevented access to the mine.

			• **thirdparty**: The visit was carried out by a third party (not by IPIS). • **weather**: The weather prevented access to the mine (for example: due to heavy rains). • **other**
2. Location			
geom	text-free	Geometry representation (in WKT) of the mine location.	Format: SRID=4326;POINT(longitude latitude)
longitude	numeric	The longitude of the mine location.	Note that the IPIS database always provides the coordinates of the most recent visit to a given mine; historical visits are not provided with their coordinates as recorded at the time of the visit.
latitude	numeric	The latitude of the mine location.	Note that the IPIS database always provides the coordinates of the most recent visit to a given mine; historical visits are not provided with their coordinates as recorded at the time of the visit.
location_origin	text-single	The accuracy of the mine location.	Possible values: • **approx**: The mine location was either a) estimated based on a description by the IPIS research team, b) chosen based on satellite imagery, or c) provided by a third party using their own methodology. • **gps**: The mine location was registered at the mine by the IPIS research team. The point may be located anywhere within the mine, but teams generally try to register coordinates near the spot with the highest mining activity.
province	text-single	The province in which the mine is located.	Please visit this link for a list of the provinces.
territoire	text-single	The territory in which the mine is located.	Please visit this link for a list of the territories.
collectivite	text-single	The *chefferie*, *secteur*, or *commune* in which the mine is located.	Please visit this link for a list of the *chefferies* and *secteurs*.
groupement	text-free	The *groupement* in which the mine is located.	The precise boundaries of the *groupements* are often unknown and may be subject to individual points of view. The main reference used by IPIS the book *Atlas de l'organisation administative de la*

			République démocratique du Congo by Léon de Saint Moulin and Jean-Luc Kalombo Tshibanda, published by the Centre d'Études Pour l'Action Sociale (CEPAS) in 2011, see link.
village	text-free	The names of one or more villages nearby the mine.	
3. Exploitation			
n_pits	integer	The number of active pits and tunnels at the mine.	
depth	integer	The maximum depth of the pits or tunnels at the mine.	
exploitation	text-multi	The exploitation type used at the mine.	Possible values: • **dredge_auto**: A dredge (boat) scrapes soil off the riverbed using a powered mechanism. • **dredge_manual**: Divers descend to the riverbed from a small boat and fill buckets with soil from the riverbed. • **hydro**: Workers use the flow of water to help erode soil and/or flow minerals down to a treatment spot, often with the help of motor pumps. • **pits**: Workers dig mining pits that may be quite deep but remain open to the sky. • **semi_industrial**: Semi-industrial exploitation by mining companies. • **tailings_asm**: Workers search for leftover minerals in tailings from former artisanal operations. • **tailings_lsm**: Workers search for leftover minerals in tailings from former industrial operations. • **underground**: Workers dig tunnels or galleries into the rock or soil.
mineral_origin	text-multi	The type or origin of the minerals being mined.	Possible values: • **alluvial**: Minerals that have been transported and deposited by a river, typically appearing in the form of small nuggets. • **eluvial**: Minerals that have been weathered by wind and rain, typically appearing in smaller particles spread throughout the soil.

			• **sedimentary**: Sedimentary rock, typically relevant for copper and cobalt. • **tailings**: Leftover minerals from former mining operations. • **vein**: A mineral vein, typically found underground. • **other**
mechanisation	text-single	The mechanization level is a composite parameter derived by IPIS based on the exploitation type and the tools being used at a mine. It bears no relationship to the levels of industrialization considered by the Congolese mining code.	Possible values: • **high**: The mine uses at least one crusher, compressor, excavator, generator, jackhammer, or chainsaw. • **medium**: The mine uses at least one metal detector, motor pump, pulley, or sluice. • **low**: The mine only uses manual tools.
4. Minerals			
is_gold_mine	integer	Is gold extracted at the mine?	Possible values: • **1**: Yes. • **0**: No.
is_3t_mine	integer	Are cassiterite, coltan, or wolframite (3T minerals) extracted at the mine?	Possible values: • **1**: Yes. • **0**: No.
is_2c_mine	integer	Are copper or cobalt (2C minerals) extracted at the mine?	Possible values: • **1**: Yes. • **0**: No.
mX	text-single	The name of the mineral being extracted at the mine.	Possible values: • **cassiterite** • **cobalt** • **coltan** • **copper** • **diamond** • **gold** • **manganese** • **tourmaline** • **wolframite**

			• **other**
mX_specify	text-free	The name of the mineral being extracted at the mine, if not present in the above list.	
mercury	integer	Is mercury used to separate gold from unprocessed ore at the mine?	This column is only relevant when is_gold_mine = 1. Possible values: • **1**: Yes. • **0**: No. Note that the presence of mercury was only registered from **2015** onwards.
cyanide	integer	Is cyanide used to separate gold from unprocessed ore at the mine?	This column is only relevant when is_gold_mine = 1. Possible values: • **1**: Yes. • **0**: No. Note that the presence of cyanide was only registered from **2024** onwards.
5. Workers			
n_workers	integer	The number of workers active in production at the mine.	This number includes all men, women, and children that dig for minerals, transport minerals, treat minerals, etcetera on the entire site.
workers_trend	text-single	Whether the number of workers has significantly changed during the 6 months prior to the visit by the research team.	Possible values: • **fewer**: The number of workers has decreased significantly. • **similar**: The number of workers has not changed significantly. • **more**: The number of workers has increased significantly.
6. Women and children			
women	integer	Are there women present at the mine?	Possible values: • **1**: Yes. • **0**: No.
women_work_direct	text-multi	What production-related work is carried out by women at the mine?	This column is only relevant when women = 1. Possible values:

			• **none** : Women do not carry out production-related work at this mine. • **collect**: Collecting ore and rocks on the surface. • **dig_surface**: Digging for minerals in open air. • **dig_underground**: Digging for minerals underground. • **dive**: Diving to the riverbed to collect minerals. • **manager**: Working as "chef de site". • **mercury**: Treating minerals using mercury. • **tailings**: Treating tailings. • **transport**: Transporting minerals. • **treat**: Treating minerals (crushing, washing, etc.). • **other**
children	integer	Are there children (under 18) present at the mine?	The IPIS data about the presence of children is subject to an important caveat. Until 2024, our questionnaires only considered persons younger than 16 as "children" (persons aged 16 or 17 were excluded from the relevant questions). Starting from 2025, our questionnaires have considered all persons younger than 18 (persons aged 16 or 17 are included in the relevant questions), to align with Congolese laws on the definition of child labor. Possible values: • **1**: Yes. • **0**: No.
children_work_direct	text-multi	What production-related work is carried out by children at the mine?	This column is only relevant when children = 1. Possible values: see question **women_work_direct**.
7. Safety			
n_accident_injured	integer	How many workers have been injured in accidents during the past 6 months?	
n_accident_dead	integer	How many workers have died in accidents during the past 6 months?	

8. Due diligence			
coop	integer	Are one or more mining cooperatives present at the mine?	Possible values: • **1**: Yes. • **0**: No.
traceability	integer	Is the mine covered by a traceability scheme?	Possible values: • **1**: Yes. • **0**: No.
traceability_specify	text-multi	Which traceability scheme is active at the mine?	This column is only relevant when traceability = 1. Possible values: • **bsp**: The *Better Sourcing Program* by the *Responsible Minerals Initiative*. • **itsci**: The *International Tin Supply Chain Initiative* by the *International Tin Association*. • **other**
destination_first	text-free	The trading hubs where minerals from this mine are sold.	
destination_final	text-free	The final destination within the DR Congo to which minerals from this mine are transported before export.	
qualification	text-single	Has the mine been officially qualified by the Congolese government?	For more information, please visit this link. Possible values: • **red**: Unsatisfactory security and social situation. • **blue**: The mine has requested and is awaiting qualification by the government. • **yellow**: Partially satisfactory security and social situation. • **green**: Fully satisfactory security and social situation.
qualification_date	date	On what date did the mine receive its qualification?	Format: YYYY-MM-DD
title_name	text-free	If the mine was located on an active mining concession at the	The concession information is based on a dataset by CAMI from 2022, and excludes more recently issued concessions. For more recent information, please visit this link.

		time of visit, what is the concession type and number?	Format: type-number (for example: PR-12345) Possible values: • **AECP**: Autorisation d'exploitation de carrières permanente. • **ARPC**: Autorisation de recherches des produits de carrières. • **CUP**: Carrière d'utilité publique. • **PE**: Permis d'exploitation. • **PEPM**: Permis d'exploitation de petite mine. • **PER**: Permis d'exploitation des rejets. • **PR**: Permis de recherche. • **ZEA**: Zone d'exploitation artisanale.
title_holder	text-free	If the mine was located on an active mining concession at the time of visit, who is the concession holder?	The concession information is based on a dataset by CAMI from 2022, and excludes more recently issued concessions. For more recent information, please visit this link.
9. Armed groups			
agX	text-single	The name of the armed group present at or near the mine.	Possible values: • **adf**: ADF (Allied Democratic Forces). • **autodefense**: Jeunesse Autodéfense Zaïre. • **codeco**: CODECO (Coopérative pour le Développement du Congo). • **fardc**: FARDC (Forces Armées de la République Démocratique du Congo). • **fdlr**: FDLR (Forces Démocratiques de Libération du Rwanda). • **frpi**: FRPI (Force de Résistance Patriotique d'Ituri). • **m23_afc**: M23/AFC (Mouvement du 23 mars/Alliance Fleuve Congo). • **maimai**: Maï-Maï (various community-based militia groups). • **ndc**: NDC (Nduma défense du Congo). • **ndcr**: NDC-R (NDC-Rénové). • **nyatura**: Nyatura (a maï-maï militia). • **police**: Police Nationale Congolaise (PNC). • **polimin**: Police des Mines et des Hydrocarbure (PMH). • **raia**: Raïa Mutomboki (a maï-maï militia).

			• **security**: Private security actor. • **uplc**: UPLC (Union des Patriotes pour la Libération du Congo). • **other**
agX_type	text-single	The type of the armed group.	Possible values: • **none** : There are no armed groups present at the mine. • **ag_foreign**: A foreign armed group. • **ag_local**: A Congolese armed group. • **fardc_behave**: The FARDC, with no observed interference in the mining sector. • **fardc_misbehave**: The FARDC, with undisciplined members that interfere in the mining sector. • **police_behave**: The PNC, with no observed interference in the mining sector. • **police_misbehave**: The PNC, with undisciplined members that interfere in the mining sector.
agX_freq	text-single	The frequency with which the armed group is present at the mine.	Possible values: • **always**: Daily. • **weekly_more**: More than once per week. • **weekly**: Once per week. • **biweekly**: More than once per month. • **monthly**: Once per month. • **yearly**: Once per year. • **randomly**: Randomly. • **never**: Never, the armed group exerts its influence remotely (for example, through taxation of mine owners in a nearby village).
agX_pillage	integer	Does the armed group carry out raids (looting) at the mine?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_forced_labor	integer	Does the armed group force workers to work without pay?	Possible values: • **1**: Yes • **0**: No

			Note that the behavior of armed groups was only registered from 2013 onwards.
agX_pit_ownership	integer	Does the armed group own some of the mine's pits?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_digging	integer	Do members of the armed group work as miners at the site?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_buy_minerals	integer	Does the armed group buy a part of the mine's production?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_tax_minerals	integer	Does the armed group levy mining-related taxes at the mine?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_tax_goods	integer	Does the armed group tax non-mining-products at the mine?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.
agX_roadblock_entry	integer	Has the armed group erected a roadblock where toll must be paid for access to the mine?	Possible values: • **1**: Yes • **0**: No Note that the behavior of armed groups was only registered from 2013 onwards.

10. State services			
ssX	text-single	The name of the state service present at the mine.	Possible values: • **anr**: Agence Nationale de Renseignements (ANR). • **antifraude**: Service Antifraude (including CNLFM). • **chefferie**: Autorité de chefferie ou secteur. • **dgi**: Direction Générale des Impôts (DGI). • **dgm**: Direction Générale de Migration (DGM). • **dgrpi**: Direction Générale Adjointe des Recettes de l'Ituri (DGRPI). • **divmine**: Division des Mines. • **environment**: Environmental service (including FFN). • **groupement**: Autorité de groupement ou localité. • **police**: Police Nationale Congolaise (PNC). • **polimin**: Police des Mines et des Hydrocarbure (PMH). • **saemape**: Service d'Assistance et d'Encadrement de l'Exploitation Minière Artisanale et à Petite Echelle (SAEMAPE). • **secteur**: Autorité de secteur. • **other** Note that the presence of state services was only registered from 2015 onwards.
ssX_freq	text-single	The frequency with which the state service is present at the mine.	Possible values: • **always**: Daily. • **weekly_more**: More than once per week. • **weekly**: Once per week. • **biweekly**: More than once per month. • **monthly**: Once per month. • **yearly**: Once per year. • **randomly**: Randomly. • **never**: Never, the state service exerts its influence remotely (for example, through taxation of mine owners in a nearby village).