PHOTOGRAPHY

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CMP
Community Managed Project Approach

Definition

➢ ***Etymologically***: Photography came from two Greek words. 'Photo' means 'light', 'graphos' means 'drawing'. It then might mean **writing with light**.

➢ ***Professionally***: A photograph may best be described as a *reasonably stable image* made by the *effect of light on a chemical substance*.

➢ ***Use of the term:*** Antoine Hercules Romuald Florence of Brazil was said to be using term for the first time in 1833.But Sir John Herschel was credited for using the term in 1839.
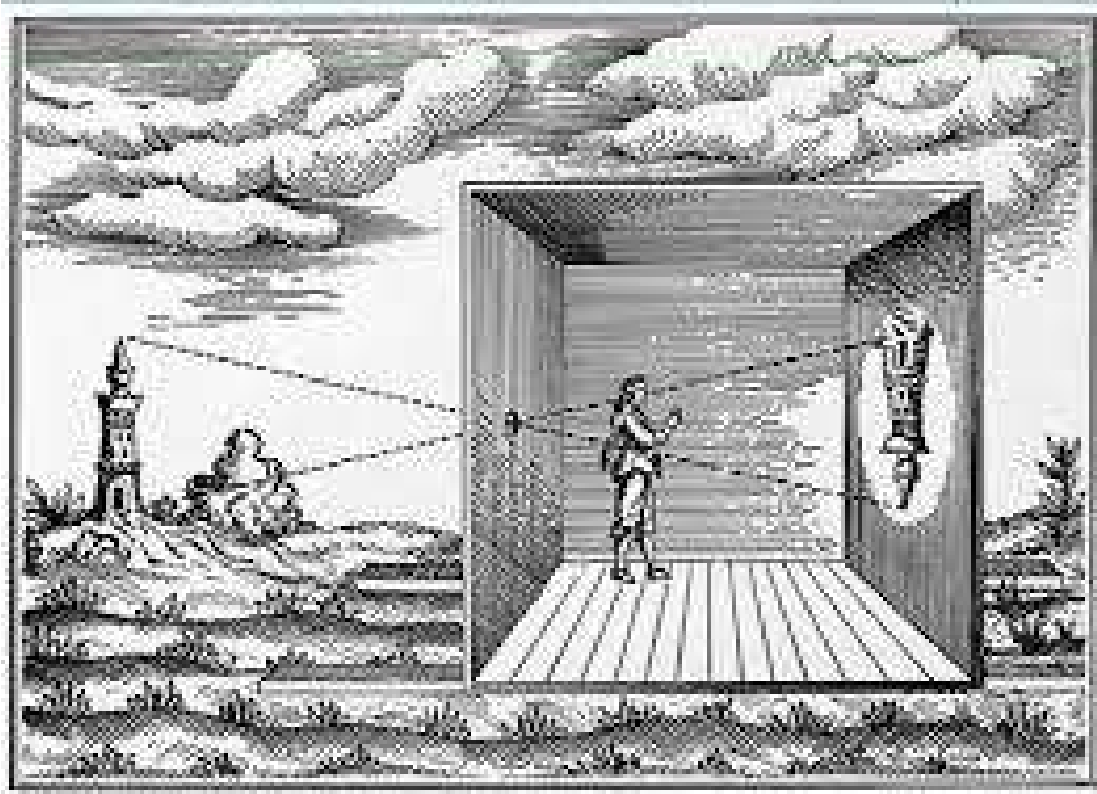
# Historical Evolution of Photography

Camera Obscura

➢ is a pinhole camera or *"camera obscura"* (latin words meaning "dark room"). It's a dark, closed space in the shape of a box with a hole on one side of it (before 10 century).

➢ Made portable in 17th century. It was made portable by putting it in a box with a pinhole on one side and a glass screen on the other.
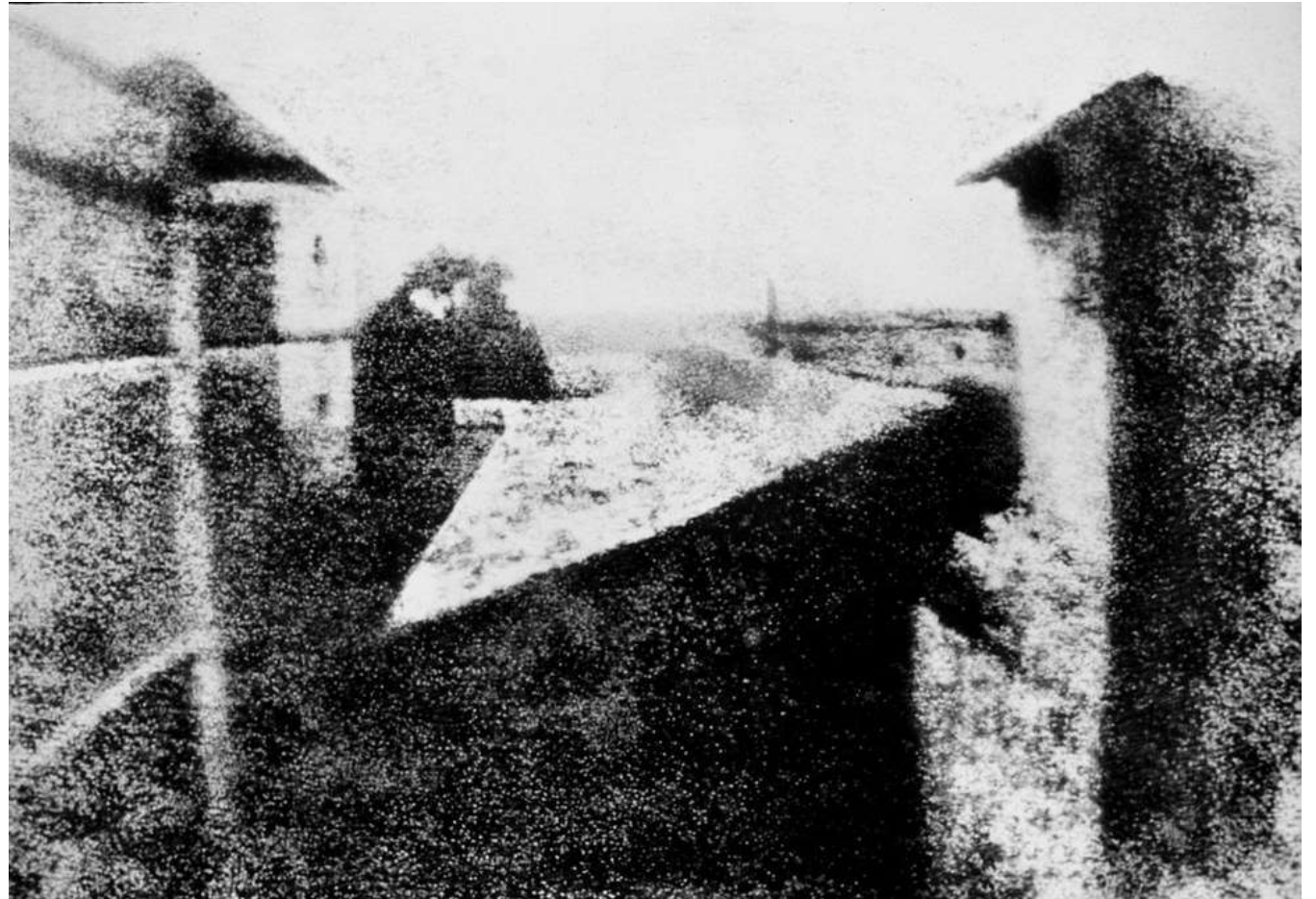
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Importable Camera

Portable Camera
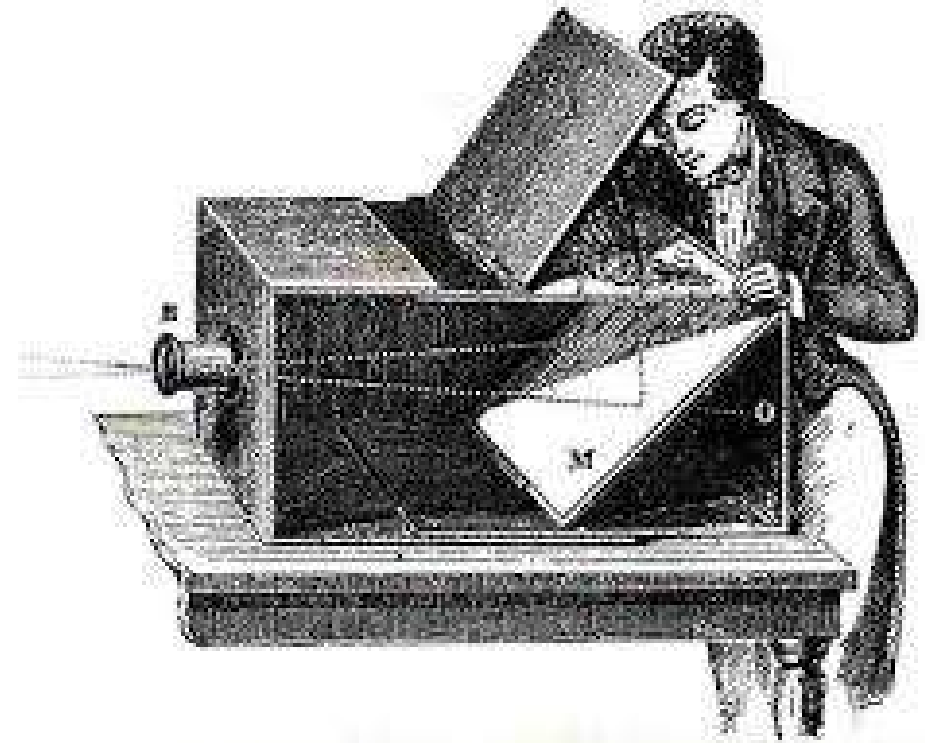
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Joseph Nicephore Neipce

➢ A French scientist started working on photography using camera obscura in 1816

➢ *Neipce took the first ever photograph and called it Heliography in 1826.*

➢ Heliography was made of two Greek words. 'Helios' means 'Sun' and 'Graph' means 'drawing'. Therefore, Heliography was meant 'sun drawing'.

Cont...

➢ He put a plate coated with bitumen (an asphalt used in ancient times as a cement or mortar) in a camera obscura

➢ He placed the camera obscura facing his house for eight hours and made a photograph.

➢ It is the earliest known photograph still in existence today.

Cont…

Niepce (left) began sharing his findings with Louis Jacques Mande Daguerre (right), an artist who owned a theatre in Paris. They became partners in 1829. Daguerre's most important discovery came in 1835, two years after Niepce died.

Daguerreotype

➢ Daguerre found that the chemical compound silver iodide was much more sensitive to light than Niepce's bitumen.

➢ put a copper plate coated with silver iodide in a camera obscura, exposed this plate to light for a short time, then to fumes of mercury & an image appeared!

➢ Instead of requiring an exposure of hours, the new process required only minutes.

➢ He called the image daguerreotype.

CONT…

➢ Daguerreotype, was announced to the world on January 7, 1839.

➢ 6 months later the French government gave Daguerre and Niepce's son, Isidore, lifetime pensions in exchange for all rights to their invention.

➢ The daguerreotype was to become France's gift to the world.

CALOTYPE

William Henry Fox Talbot, developed a similar process.

➢ 1839- photogenic drawings. He hurriedly collected his materials and presented for recognition

➢ 1840/1 invented calotype. The negative image was converted to a positive image.

➢ He was inventor of the negative-positive system of photography.

➢ The great advantage of this process is its reproducibility

➢ *Pencil of Nature* – 1844, a photographic book of still lives and landscape

COLLODION WET-PLATE

➢ In 1847 Niepce De Saint Victor, a cousin of Joseph Nicephore Niepce, introduced one of the first successful glass plate processes, using albumen (egg whites) as a clear substance that would carry the silver salts and adhere to glass.

➢ However, not as sensitive neither daguerreotype nor calotype; requiring very long exposures.

➢ In 1851 an English sculpcor, Frederick Scott Archer, discovered the use of collodion as a carrier for silver sales.

Gelatine Emulsions

- ➢ The search for a dry plate with the sensitivity of the wet plate was finally ended with the discovery of gelatin as a carrier for the silver salts.
- ➢ Richard L. Maddox was the first to make this discovery in 1871, and Richard Kennett and Charles H. Bennett improved it into a practical process by 1879.
- ➢ The gelatin dry plates were a revolution, since they allowed the manufacture of photographic plates that could be stored, carried to a site and exposed, and then developed at the photographer's leisure-in.

Flexible Films

- ➢ The next step was to replace the heavy, fragile glass plates with a lightweight, flexible material.
- ➢ George Eastman was the first to invent a practical way of manufacturing the flexible film base.
- ➢ Eastman introduced a camera, called the Kodak, using roll film on this base in 1888.
- ➢ Eastman had his cusromers return the entire camera to him for removal, processing, and printing of the film.
- ➢ Eastman's motto was You Push the Button, We Do the Rest!.

COLOUR

- ➢ color daguerreotypes—invented by Levi Hill in the1850s
- ➢ Heliochrome, first exhibited in 1877 by Niépce De St. Victor, were not influential in the evolution of colours.
- ➢ In 1861 James Clerk-Maxwell made a celebrated demonstration of additive color synthesis
- ➢ This type of additive screen process was not a reality until John Joly introduced the first commercially successful additive ruled plates in the mid-1890s.

The Basics of Photography

EXPOSURE

It is how much light is allowed to reach the light sensitive film/sensor.

What controls exposure?
There are three things which control exposure:

     The aperture
     The shutter speed
     The setting of the ISO .

Cont…

Aperture

➢ Aperture is the size of the hole in the diaphragm/lens that allows light in to the camera
➢ The larger the hole, the more light that enters the camera in a given time.
➢ Expressed as fraction of focal length (called f-number)

CONT...

Large Aperture — f/2

Medium Aperture — f/8

Small Aperture — f/22

Cont...

F-stops

➢ the length of the lens (focal length) and divide it by the diameter of the lens opening which results in a number called an F-stop.

➢ For example,50 mm focal length lens\25 mm diameter opening = F2.0

➢ As the lens opening gets smaller the F ratio gets bigger.

➢ Smaller F-Numbers represent wider apertures, and larger F-Numbers are smaller apertures.

Cont...

Depth of field

➢ Range of distance that is acceptably "in focus".
➢ The thing to remember is that the smaller the f number, the shallower the depth of field.
➢ Small f number = big opening = shallow depth of field = less of the picture in focus.
➢ Large f number = small opening = greater depth of field = more of the picture in focus.

F2.8

F16

Cont…

Shutter speed
➢ Controls the amount of time the shutter or curtain is opens. It controls how long the film/sensor is exposed for.
➢ The sensor in the camera is exposed to the scene it sees through the lens
➢ The time the shutter is open is called the shutter speed. It's measured in fractions of a second: 1/60, 1/100…
➢ A doubling or halving of the Time value (Tv) represents one stop of EV.

CONT ....

Camera Shake vs Movement

➢ Shutter speed controls the 'movement' in & of a picture & subject.

➢ Fast shutter speed freezes the action of an image. A slow shutter speed blurs the action of an image.
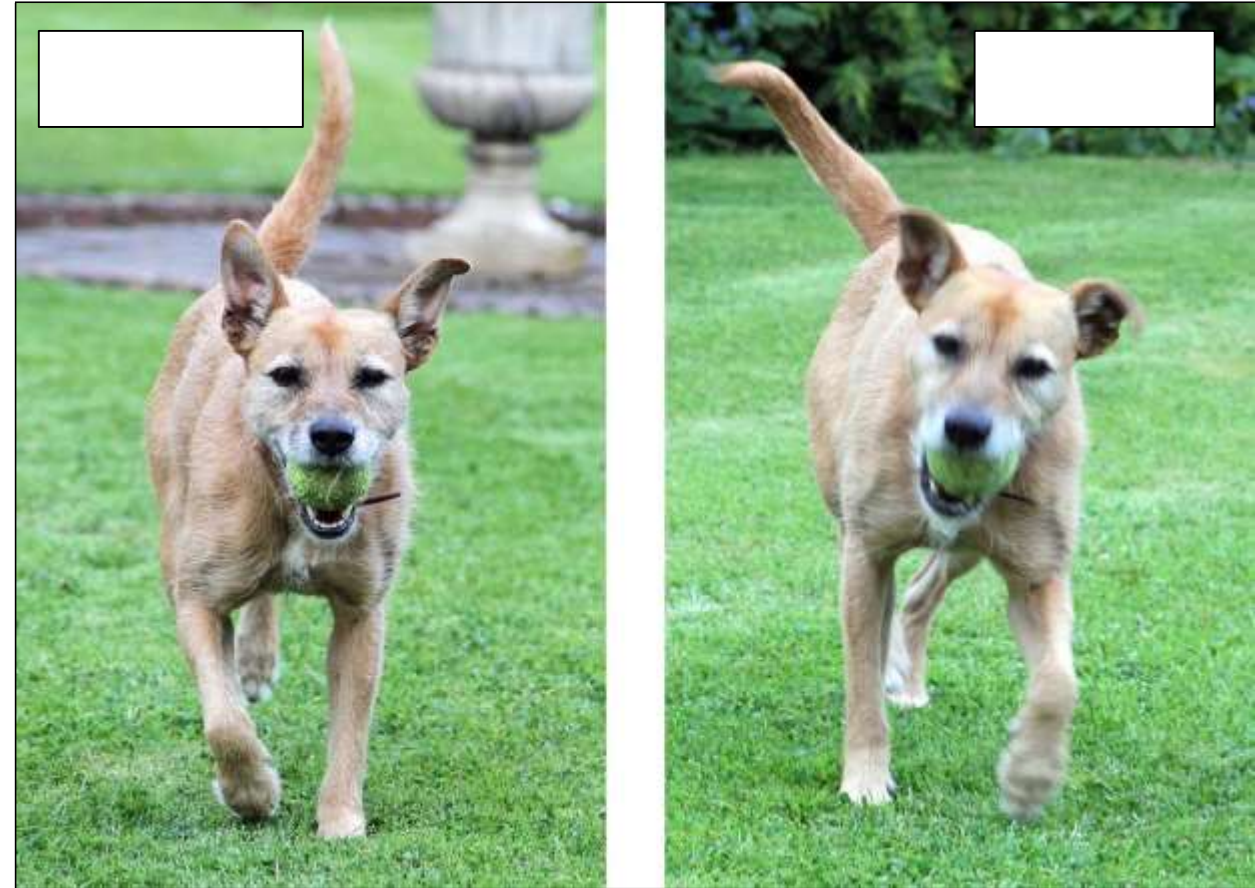
Av & TV together

➢ The wider the aperture used, the less time- i.e. the fast shutter speed – is needed to properly expose the image

➢ Conversely, the slower the shutter speed, the smaller the aperture needs to be

➢ For any image, there are a number of combinations that will make a correct exposure.

F-stop	1.4	2	2.8	4	5.6	8	11	16
Shutter Speed	1000	500	250	125	60	30	15	6

Cont...

SENSITIVITY (ISO SCALE)

➢ ISO number refers to how sensitive the sensor (or film in the old days), reacts to light.

➢ These days, with digital cameras, the ISO range is vast and typically:100, 200,400,800,3200,6400.

➢ As with steps in Apertures and Shutter Speeds, steps in ISO settings react twice as fast or half as fast as each other.

Cont...

➢ high ISO rated films produced prints which were 'grainy'. The equivalent of grain in digital pictures is 'noise'.

➢ ISO 100 - low sensitivity, good for bright conditions, static scenes, wide aperture, slow shutter

➢ ISO 1600 - high sensitivity, good for low light, dynamic scenes, small aperture, fast shutter

ISO 200
Daylight, sunny, light overcast

ISO 1600
Low Light - Morning, Dusk, Heavy Cloud, whenever you need faster shutter speed

ISO 25000
Very Low Light, before sunrise after sunset

Note: actual amount of Noise varies with digital camera chip size, camera model, and noise reduction settings, always try to use the lowest ISO speed possible as it is difficult to reduce noise in existing images.

Camera Modes/Dials

- ***Fully Automatic***: It is the mode where the camera will select the settings for you. You only position the subject correctly and shoot
- ***Shutter Priority AE (Tv):*** You set the shutter speed, camera sets the rest for you. The priority is to control the movement of the subject. (P. 162)
- ***Aperture Priority AE (Av):*** you set the desired aperture, camera does the rest automatically. The priority is to control exposure (P.63)
- ***Manual Exposure (M):*** you set the desired aperture and shutter speed. You're in total control.

Purposes of Photography in COWASH

- Illustrate the material benefits brought to poor communities through COWASH's water, sanitation and hygiene education projects
- Give an insight into the realities of daily life and the importance of water, sanitation and hygiene to the people involved

GOOD PROJECT PHOTOS

- The photos that COWASH uses most predominantly are of people- people should be portrayed as active and self-reliant.
- capture action and movement when it is appropriate. Take un-posed shots, more 'self-conscious' portraits and 'action' photos.
- Show pre- and post- intervention situation in provision of access to safe water and improved sanitation and hygiene.

CONT...

- ***Plan***: determine the objective of the photography. And let communities know that you are coming to visit them.
- ***Privacy***: while taking photos of the person/s try to avoid a crowd. Request the crowd to leave them alone.
- ***Don't shay away***: get closer to your subject. As much as possible try to limit zooming.
- ***Turn the camera around***: photograph your subject both from a vertical view (portrait) and also a horizontal view (landscape).

Cont…

- Use different direction: Don't just take photos from the same position or at a juxtaposed position – try changing your angle of view instead.
- Space**:** is very useful when using images for leaflets, posters or website as it allows text to be written over it.
- Position your subject: There are two classic examples of how to frame your photos.

  Off-center : positioning the subject off-center.

  Central position: Positioning subject near the center.

RULE OF THIRDS

Cont…

- Position your subject: There are two classic examples of how to frame your photos

    Off-center : positioning the subject off-center.

    Central position: Positioning subject near the center.

- Unclutter shots: best pictures are clear, uncluttered shots that really capture the essence of our work and the challenges faced.
- The most powerful images usually involve subjects making eye contact with the camera.
- It's better to take time over the set-up of a photo than risk not being able to use it because the background isn't right.

How to edit and save images

- *File 1*. Every image you shoot goes in here
- File 2. Images you have selected to use
- File 3. The final versions. Images ready for use

Editing
- Numbering
- Re-sizing
- Captions

Ethical photo policy
Permission

Lighting Direction

- The direction the light comes from can make the image seem flat or 3-dimensional
- Front lighting is easy to photograph, but images are generally flat.
- Top lighting such as from the sun overhead, also makes the image flat, and shadows are short and dark
- Side lighting will emphasize textue and contours, and create long shadows.

Lighting Colour

- The colour of natural light changes through the day.
- Humans respondond psychologically to different colour. Therefore, the colour of a photo will affect emotional responses.
- Light that is in the reds, oranges and yellows is said to be 'WARM' conversely, 'cool' light is blue in tone.
- When taking a photo with a digital camera, the white balance setting of a camera will affect the colour cast of the image, balancing the lighting of the subject

THANK YOU

➢Camera Obscura

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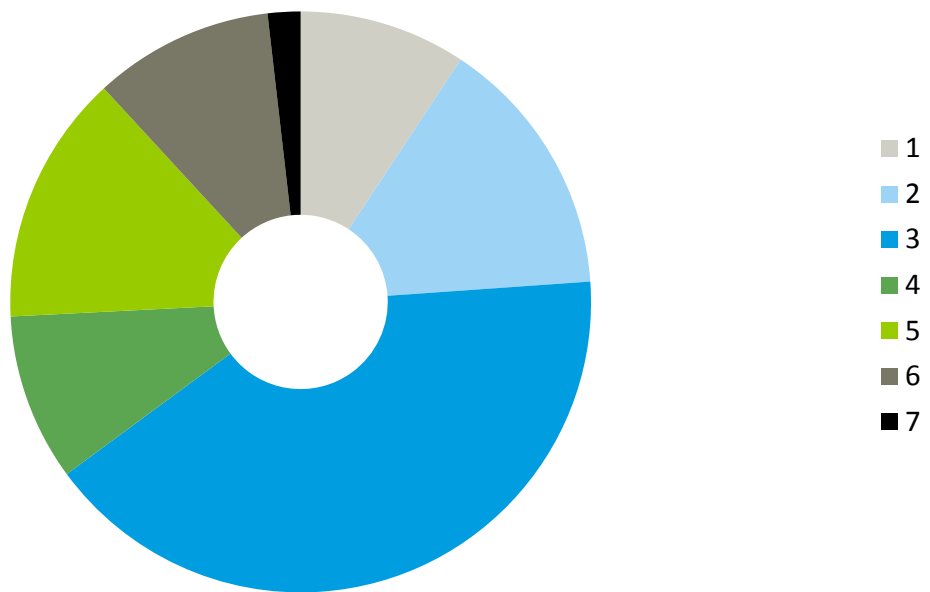
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