Earthian awards submission - Water
धरती पुरस्कारों का प्रस्ताव - जल

507
1/11/17

Schools Name (विद्यालय का नाम) : BAHADURPUR PUBLIC SEN. SEC. SCHOOL NAMHOL

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2/11/2017

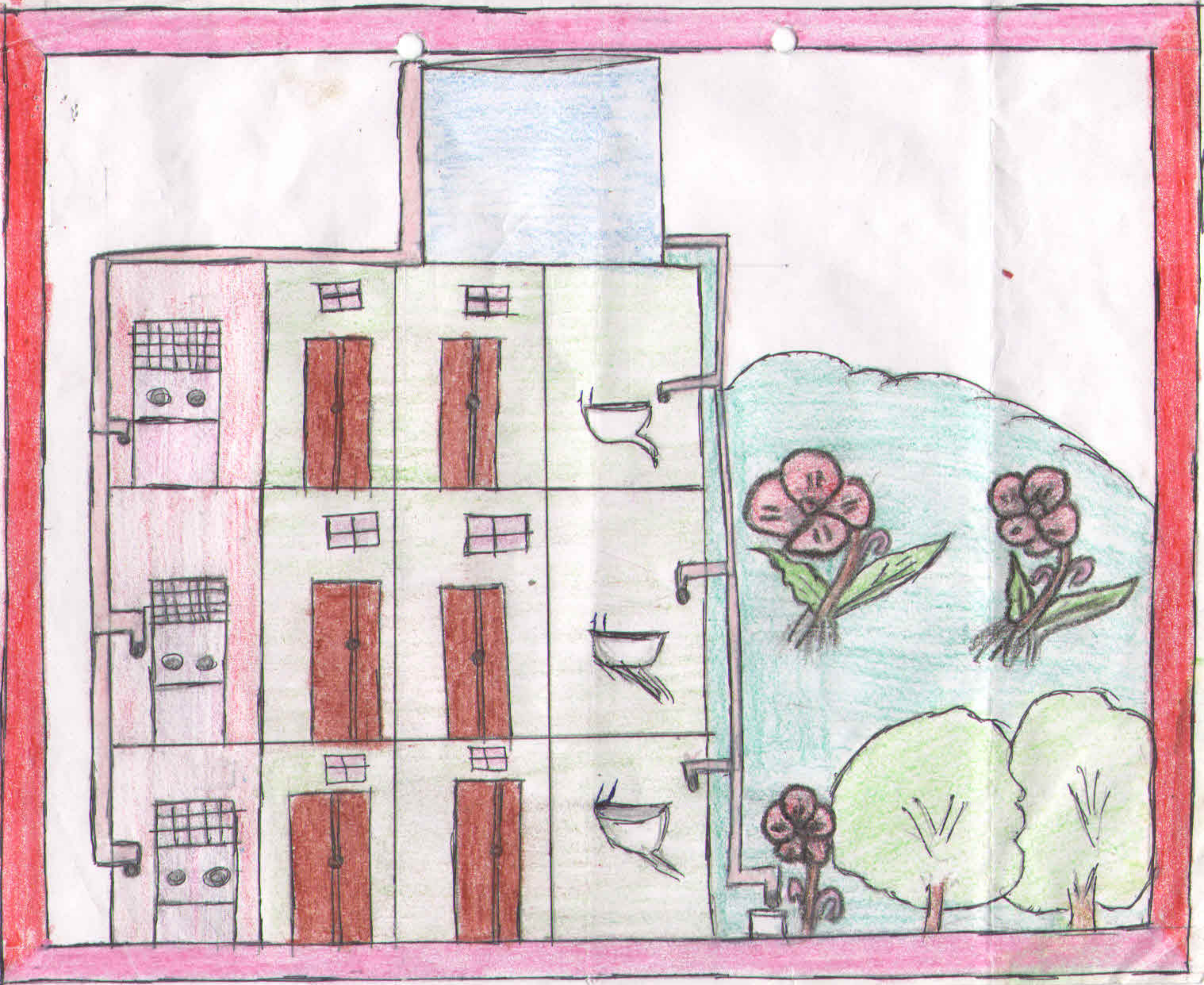
This is to certify that the information provided in the submission is true to the best of my knowledge.

यह प्रमाणित किया जाता है कि मेरे द्वारा इस प्रस्ताव में प्रस्तुत गयी समस्त जानकारी सत्य है ।

Signature (हस्ताक्षर)

Date: (दिनांक) 28/10/17

2/11/2017



Part A भाग अ

Flow of water map / field sketch
पानी के बहाव का नक्शा / फील्ड स्केच

Reflection
प्रतिफल / अभ्यास

Our School has three buildings. All three buildings are made in good way. Our school has one water tank from this tank water is supplied for all araunds of our school. First of all our school tank transfer the water for drinking and our school has three buildings and all these three building has one-one toilet and one-one water tab for drinking water. Our school has three coolers. These three coolers are present in the three buildings. The water is drinke by the 300 students. and also water used in toilets used by 300 students and 15 teachers. Our school has one garden and this garden is very beautiful. It has beautiful flowers and trees. The water is supplied by the plants from the tank by drip system. Our school does not waste the water. They does not take extra water. They use the water for only their needs.

Usage of water पानी का उपयोग

Usage उपयोग	Quantity per use उपयोग की मात्रा	Times used per day प्रतिदिन उपयोग करने में लगा समय	Number of users उपयोग की संख्या	Times used per month एक महीने में लगा समय	Total monthly consumption महीने में कुल उपयोग
Toilets शौचालय	600 litres	2 time per stu.	300	50	15000 l
Handwash हाथ धोने में	60 litres	1 time by per stu.	300	25	1500 l
Mopping floor फर्श धोने में	170 litres	2 time in a week	17 rooms	8 times	1360 l
Washing vessels बर्तन धोने में	15 litres	1 time	1	25	375 l
Washing vehicles गाड़ियाँ धोने में	- - - -	- - - -	- - - -	- - -	—
Kitchen cooking रसोई की सफाई में	—	—	—	—	—
Drinking water पीने में	600 litres	time to time	300	time to time	15000 l
Gardening बगीचे में	10 litre	1, time	20 plants	25	250 l
Total कुल उपयोग	1455 l	7	938	133	31,985 l

Reflection
प्रतिफल / अभ्यास

In this table uses of water for all purposes are shown. The water is used in very big quantity. The all living organism need water. The water used in big quantity by all living organism. The table shows that 938 users use 1455 litres water per day and 31985 litre water is used in a month for toilets, handwashing mopping floor, washing vessels, drinking and gardning.

Quality of water पानी की गुणवत्ता

Parameter पैरामीटर	Observation अवलोकन	Cause कारण	Related risks संबंधित खतरे
Colour रंग	colourless	No causes.	No
Turbidity मिट्टी की गंदगी	Present		Yes
Smell गंध	Present		Yes
Suspended Solids निलंबित ठोस	Absent		No

Visit to the local doctor to find out water quality related ailments reported by patients.
पानी की सम्बंधित बीमारियों से प्रभावित मरीजों के सम्बन्ध में स्थानीय चिकित्सक से चर्चा करें।

Diseases: Cholera, Amoebiasis

Follow safe drinking water technique

→ To drink boiled and cool water.

→ To make surce their are no stagnant water pits its in our surrounding environment.

→ To use the toilet hence forth making safe sanitation.

→ Obey handwashing techniques.

Reflection प्रतिफल / अभ्यास

First take a glass of half water. Stir it for 24 hours without any type of movement. At next day I look at the glass of water the colour of water is colourless but some soil particle is present in the water. It has a very bad smell like a roden peel of banana. It is harmful because if we drink that water which stir for 24 hour it may causes. If we boil that water and drink it will not harm to us.

Rainwater harvesting potential
संचयन जल की क्षमता

Description विवरण	Rooftop छतीय वर्षा जल	Paved पक्की ~~छत~~ जगह	Unpaved कच्ची ~~छत~~ जगह
Area in square meters क्षेत्रफल (वर्ग मीटर में)	$170 m^2$	$100 m^2$	$96 m^2$
Average annual rainfall औसत वार्षिक वर्षा जल	1200 mm	1200 mm	1200 mm
Runoff coefficient बह जाने वाले जल का गुणांक	0.8	0.5	0.1
Potential क्षमता	1,63,200 l	60,000 l	11,520 l

Potential = Area in square meters x Average annual rainfall x Runoff coefficient

Rooftop = $170 m^2 \times 1200 mm$ = 1,63,200 l

Paved = $100 m^2 \times 1200 mm$ = 60,000 l

Unpaved = $96 m^2 \times 1200 mm$ = 11,520 l

Total = 2,34,720 l

Reflection प्रतिफल / अभ्यास

The area of rooftop water is $170 m^2$, paved water is $100 m^2$ and unpaved $96 m^2$. The average of annual rainfall of rooftop is 1200mm, paved is 1200 mm and unpaved is 1200mm. The runoff coefficient of the rooftop is 0.8, paved is 0.5

and unpaved is 0.1. The potential of the rooftop water is $170 m^2 \times 1200 mm = 1,63,200 l$ paved is $100 m^2 \times 1200 mm = 60,000 l$ and unpaved is $96 m^2 \times 1200 mm = 11,520 l$. The total of rooftop, paved and unpaved is 2,34,720l.

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Connecting the dots बिंदुओं को जोड़े:

How are the different issues studied under previous activities linked to each other?
पिछले गतिविधियों के तहत विभिन्न मुद्दों के आपसी सम्बन्धो का अध्ययन करें ?

The different issues studied under previous activities in them we found that our thinking is different in many ways and in very small quantity our thinking is same.

How does water come into your campus? What are the factor that affect global and local rainfall?

आपके परिसर में पानी कैसे आता है? वैश्विक और स्थानीय वर्षा को प्रभावित करने वाले कारक क्या हैं?

Observe, interview and document different impacts of used and sewage water that flows out of your campus.
अपने कैंपस से निकलने वाले उपयोग किये गए जल और सीवेज़ पानी के विभिन्न प्रभावों को देखें, लोगो से साक्षात्कार कर दस्तावेज़ बनाये ।

The used and sewage water is stored in a tank This water is used for irrigation.

Do the different plants, insects, animals on your campus produce waste water like we do, if not how do they manage?

क्या आपके परिसर में विभिन्न पौधे, कीड़े, जानवरों द्वारा जल को प्रदूषित किया जाता है जैसे कि हम करते है, यदि नहीं, तो वे किस प्रकार से प्रबंधन करते हैं?

No the different plants, insects, animals on our campus produce waste water like we do.

Part B भाग ब

Write an analytical essay in about 2500 words. In your report, analyse how many areas of life is water linked with? Geopolitics of climate change, water and farming. Impact of climate change on rainfall and the fallout on lives of people on the planet. Traditional water management techniques. The future of water management.

लगभग 2500 शब्दों में एक विश्लेषणात्मक निबंध लिखें अपनी रिपोर्ट में, विश्लेषण करें कि जीवन के कितने क्षेत्र से जल जुडा है ? जलवायु परिवर्तन, जल और खेती के भू-राजनीति, वर्षा पर जलवायु परिवर्तन का प्रभाव और धरती के लोगों के जीवन पर क्या प्रभाव पड़ रहा है ।
पारंपरिक जल प्रबंधन तकनीक एवं भविष्य में जल प्रबंधन का अवलोकन करें।

Some indicative questions to look at in this section:
इस भाग में देखने के लिए कुछ सांकेतिक प्रश्न है:

- Where does the food you eat come from?
  आपका भोजन कहाँ से प्राप्त होता है ?
- How much water is used to produce food crops?
  खाद्य फसलों के उत्पादन में कितना पानी उपयोग किया जाता है?
- Do electronic and mechanical object you use daily need water for their production?
  क्या इलेक्ट्रोनिक और यांत्रिक वस्तुओं के उत्पादन में जल की आवश्कता पड़ती है ?
- What sources of water are tapped by farmers and manufacturers?
  किसानों और निर्माताओं द्वारा पानी के किन स्रोतों का उपयोग किया जाता है?
- Will they continue to get water from these sources forever?
  क्या वे हमेशा इन स्रोतों से पानी प्राप्त करते रहेंगे?
- Is this a sustainable model of water use?
  क्या यह पानी के उपयोग का एक स्थायी तरीका है?
- If not what may happen in future?
  अगर नहीं, तो भविष्य में क्या हो सकता है?

Essay निबंध

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You are what you eat – Where does food come from?

Key ideas
- A lot of food that we eat is processed and bears little relation to the products produced by farmers.
- There are many different kinds of farms but they can be brodly divided into those that concentrate on crops (arable) and those that concentrate on animals (pastoral).
- In the UK, we eat food that is produced by farmers from across the world.

Key questions
- What are processed food made from?
- What are the two principle types of farming?
- Where does the food we eat in the UK come from.

Key Concepts.
- Place
- Scale

In the past, people mainly grew or bought food in its raw, unprocessed state – everyone knew what a patato looked like. Today, a very high precentage of food eaten in western countries is procesed in convenience food or ready meals. Leading supermarket such as Tesco and Sainsburys have aisles dedicated to different type of ready-made-meals – from beef stroganoff to chicken kozma.

In many cases, the food is already cooked for us

Increasingly, young people in the UK and similar countries have become disconnected with food production and have little understanding of how or where our food is produced.

Farmers in general will concentrate on specializing in crop or animals that are best suited to their physical environment and local /national (or even global) economic conditions. Arable farms concentrate on growing fruit, vegetables and salad crops. In UK, these are concentrated is east and south of country. Pastoral farmers concentrate on rearing animals or birds for their meat, milk, eggs or skins. In the UK, these farms are more numerous in north and west.

The UK has never been 100% self sufficient in food production simply because of our desire to eat foods that cannot physically be grown in our climatic conditions. In last 50 years, the amount of food imported into the UK has grown - currently about 40% of our food is imported (Department for Environment, Food and Rural Affairs) An additional factor has been desire to have all kinds of food available throughout the seasons, for example strawberries in winter, which are frequently imported from spain. See lesson La Produccion de Fresa en Espane (strawberry production in Spain) in Geography the language of Europe unit, for more information on this

Starter

Favourite food items

Note down your five favourite food items (pairs are allowed, for example fish and chips. In class build up a master list. How diverse is this list? Are there clear favourites?

Individually or in pairs, choose two food items from your list and note down the main raw foodstuffs that they are made from. For example crisps are made from potatoes. To help with this begin by completing the what am I eating? Power Point activity. Perhaps some of your own choices feature in this activity.

Main

Arable and pastoral farming

The large majority of the food we eat is made up of raw ingredients grown by farmers from the UK and across the world. There are two main types of farming - arable and pastoral. Have a go at the arable and pastoral power point activity which will help you identify and understand the differences between these two types of farming. Once you have completed this activity two of your top five favourite food items write a paragraph about each explaining whether the production of each items involves pastoral or arable farming or both. Think carefully about all the different food products that they are made from. Share your ideas with the rest of the class.

Plenary

Exploring the origins of unusual food items

Refer to the master list of your class favourite food items write a paragraph. You might eat some of these everyday, but perhaps other items are unfamiliar to you.

In pairs think of two unuseful food items you like, or that you would like to try explain what these are to the rest of class. What are they made of and where do they come from?

As a class complete either the fruit and veg quiz or the multiethnic food quiz. How many of these foods have you eaten where did you try them?

Typical values of water require to produce common foodstuffs

Foodstuff	Quantity	Water consumption, litres
Chocolate	1 kg	17,196
Beef	1 kg	15,415
Sheep meat	1 kg	10,412
Pork	1 kg	5,988
Butter	1 kg	5,553
Chicken Meat	1 kg	4,325
Cheese	1 kg	3,178

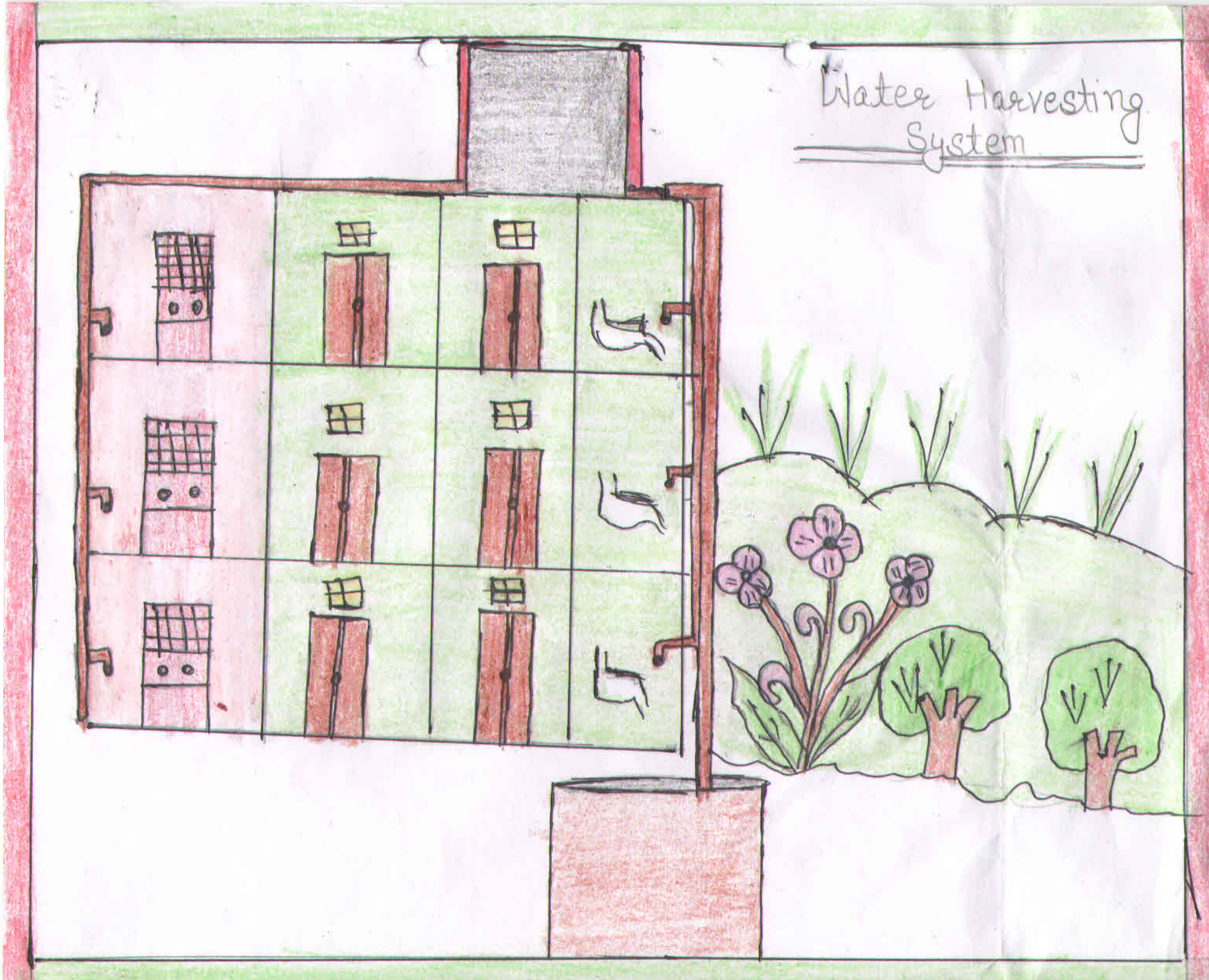
Food stuff	Quantity	Waterconsumption, liters
Olives	1kg	3,025
Rice	1 kg	2,497
Cotton	1 @ 250g	2,495
Pasta (dry)	1 kg	1,849
Bread	1 kg	1,608
Pizza	1 unit	1,239
Apple	1 kg	822
Banana	1kg	790
Potatoes	1kg	287
Milk	1X250ml glass	255
Cabbages	1 kg	237
Tomato	1kg	214
Egg	1	196
Wine	1X250ml glass	109
Beer	1X250ml glass	74
Tea	1X250ml cup	27

Some of our traditional water sources from shall ground water and dams, that have served Perth well. Since its foundation, will in future take more of a back set and make way we use our vital resource, including greater recycling of treated waste water. This new era of water supply will see sea water desalination became a major source along with an expansion program costing almost half a billion dollars to draw more water from Perth's very deep aqiufers. It will bring greater protection for our shallow aqiufer fed wetlands environment and remove the need for more severe water restrictions. our effective two days a week sprinkler roster, embraced by community will stay as part of our way of life. In future there will also be more flexibility as we can use dams to supply lower cost water when it rains or to store production from new sources for use later. But in the intrest of sustainability our response to reduced rainfall must remain focused on the need for the sector of community to be more efficient in ways we use water and simply to use less. The water corporation will continue to support program to help acheive these objects lives. The next decade will be challenging for Perth's water supplies. Our climate has been changing for several decades, but this change has became more noticeable in past ten years, presenting us with new challenges. Reduced rainfall and changing in rainfall timing have greatly reduced run of into our dams around perth and dramatically reduced their role in our drinking water supplies. We simply can no longer rely upon our dams. Despite significant reductions in water use in Perth in recent years we still need to continue to invest in new water source that are independent of climate. Our ten-years plan allow us to continue reduced our reliance on dams and groundwater from our shallow aquifers that also supply wet lands and lakes. Present water usage of our society cannot be considered sustainable; too much water of high quality is taken from the eco-system and to much polluted water is discharged. Part of this problems is due to domestic water usage. In paste decade a number of technical measure on appliance level have been developed to reduced domestic water consumption and the efficiency of chemicals used has been increased to enable lower dosages. But futher reductions are needed. Reuse and / or recycling water with in the domestic system could, in theory, lead to further reductions. Model for integration and cascading of domestic water flows that have been developed are discussed. It is shown that water usage systems with various level of intergration and cascading can lead to significant reductions in domestic water consumption and thus lower the environmental impact of domestic water usage.

Over the period 1960 - 2099, daily human water demand, withdrawal and consumption (water withdrawal minus return flow) from live stock, irrigation, industrial and domestic sectors were estimated (Wada etal 2011a, 2013b, 2014) over the 0.5° global grid using latest available historical data future projections on socio-economic (e.g. populating gross domestic product, access to water), technological (e.g., energy consumption, electricity production) and agricultural (e.g., livestocks densities, irrigated areas, crop - related data, irrigation efficiency) drivers (gridded data and country statistics). The water use calculations used in this study has been tested and extensively validatea using available country water use statistics (countries ≈ 200) in earlier work (Wada et al 2011a, 2011b, 2014). Here, to be consistent with model simulation of the water (see section 2.2) and due to data availability, we focus on RCP 6.0 or the 'middle of road' scenario under shared socioecnomic pathways (S.S.P 2) that is comparable to a business-as-usual case.

We computed livestock water use by combining livestock densities (i.e the number of the livestock per grid cell) with their drinking water requirements. We downscaled the country statistics of the number of each livestocks type (cattle, buffalo, sheep, goats, pigs and poultry) for 200 countries (FAOSTAT) to 0.5° from 1960 to 2010 by using the distribution of gridded livestocks densities of 2000 (Food and Agriculture Organization of the United Nations (FAO) 2007). The future growth of country livestocks densities was estimated in proportion to future changes in the country population since the change in livestocks densities and population show a strong correlation over past period 1960 - 2010. We assumed that no return flow to soil or river system occurs from livestocks sectors (Alcamo et at 2003, Wada et al 2011a, 2011b).

Irrigation water use was simulated with PCR-GLOBWB (Wada et al 2014). The historical growth of irrigated areas (1960 - 2010) is accountend for by using country - specific statistics of irrigated areas for 230 countries (FAOSTAT) and by downscaling these to 0.5° using the spatial distribution of the gridded irrigated areas from the MICRA 2000 data set (Portmann et al 2010). However, due to lack of future projections of the land use patterns, future expansion of irrigated areas is not considered, and hense irrigated areas remain constant at present extent. A few studies provide the future increase in irrigated areas but their estimates are low for most part of world: 0.6% yr^{-1} by 2030 for developing countries with 75% Turral 2011); global growth rates of only 0 - 0.18% yr^{-1} by 2050 and then they stabilizes (Millennium Ecosystem Assessment 2005); 75% of global irrigated areas (Bruinsma 2003); from 2.87 in 2005 to 3.18 million km^2 in 2050 global growth rates. For the irrigation sector, return flow occurs to soil layers as infiltration and to the groundwater layers as additional recharge. Domestic and industrial water withdrawal were calculated by multiplying sector - specific water use intensities by the sector - related socio - economic drivers (population, G.D.P., electricity production, energy consumption) Technological change rates per country were then approximated by the energy consumption per unit electricity production, which accounts for sectors-specific restructuring or improved water use efficiency (Wada et al 2011 a) The future improvement in water use efficiency implicitly accounts for future water saving trends in domestics and industrial sectors (under S.S.P2 scenario), that can be expected to occur in many currently developing countries in Asia, South America and Africa. Return flow from water that is withdrawn for industrial and domestic sectors is assumed to occur to the river system on the same day (no retention due to waste water treatment). For both sectors, the amount of return flow is determined by recycling ratios developed per country on basis of GDP and level of ecnomic development (Wada et al 2011 b) i.e high income (recycling ratio of 80%, 20% of water is actually consumed), middle income (65%; 35% of the water is consumed), and low income ecnomics (40%; 60% of water is consumed) middle income (65%; 35% of water is consumed and low income economics (40%; 60% of water is consumed) (see supplement and Wada etal (2011 b) for further descriptions of the calculation of return flow and limited validation exercise). Daily desalinated water use taken from the FAO AQUASTAT databas and the WRI earth (global) total ≈ 15 km^3 yr^{-1}) you was downscaled onto a global coastal ribbon ~ 40 km based on gridded population intensities and substracted for the estimated total water withdrawal and consuption as an additional source of water supply.


Water Harvesting System

Part A – Elective activities
भाग ए - वैकल्पिक गतिविधियाँ

The students should complete any two of the following activites:
छात्रों को निम्नलिखित में से किन्ही दो गतिविधि को पूर्ण करना है :

1. Design a rainwater harvesting system
   छतीय वर्षा जल संचयन प्रणाली को चित्र बनाये -

Reflection प्रतिफल / अभ्यास

Our school students does not waste the water. The rain water is stored in the tank The roof had pipes Through this pipe the water goes in the tank. The tank water is used for the plants for irrigation Our school had 20 plants. The plants are very beautiful. The rain water is used for the irrigation of plants.

2. Build a raingauge एक raingauge बनाएँ

Reflection प्रतिफल / अभ्यास

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3. Compare water demand
पानी की मांग की तुलना करें

Reflection प्रतिफल / अभ्यास

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4. Water filtration SODIS

SODIS द्वारा जल निस्पंदन

Reflection प्रतिफल / अभ्यास

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List of annexure to be submitted:
जमा किए जाने वाले दतावेजो की सूची:

- **Log book of activities conducted**
  आयोजित गतिविधियों की लॉग बुक

- **Photographs as relevant**
  सम्बंधित फोतोग्राफ

- **Videos if relevant**
  सम्बंधित वीडियो

- **Any other evidence of work done if available**
  यदि उपलब्ध हो तो किये गए काम के अन्य सबूत

If you need any help in preparing the submission please contact:
यदि आपको प्रस्ताव तैयार करने में किसी भी मदद की आवश्यकता है तो कृपया संपर्क करें:

Shri Ravi Sharma, Sr. Scientific Officer, HPSCEST - 9418084973, Email: raviBml7@yahoo.com

Shri Ashish Shah (WIPRO) : 09871702439 Email: ashish@seasonwatch.in

सभी भरे हुए प्रस्ताव एप्को को डाक / ईमेल ravisml7@yahoo.com द्वारा नीचे दिए गए पते पर दिनांक 31 अक्टूबर, 2017 तक अनिवार्य रूप से भेजे ताकि आपका प्रस्ताव पुरस्कार के लिए भेजा जा सके I

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