

# Улучшение санитарного состояния карельских деревень

Toilet waste management plan  
(draft) for Kizhi Historical,  
Architectural and Ethnographic  
Museum-Reserve

by Denis Kovyazin



# Scope of the project

- Pop. of Kizhi: 280 ppl
- Pop. of Paj: 534 actual residents + 50 summer residents
- Pop. Derevyannoe: up to 300 youngsters in 3 shifts total.

# Background Kizhi Museum

- Est. 1966, in 1990 listed as UNESCO World Natural and Cultural Heritage
- Historical, Architectural and Ethnographic Museum-Reserve Kizhi- listed as Cultural Heritage of Russia

# Kizhi Facts and Figures

- Annual visitors: 170,000 (only 4-6h ashore)
- Staff on site: 282 total
- Museum open for Onego navigation period:  
March to Oct. 6-7months/year

# Goals and Targets

- Examinations of Kizhi island population division in: a) Entrance zone, b) Tourist area, c) Museum area of administration, Yamka, Vasiljevo and Kukuevo villages
- Island mapping, location of toilets, saunas, routes; hydrological regime, distances to waterbodies etc.

# Kizhi population distribution

	Permanent	+seasonal	Total:
Entrance area (stores etc).:	4	27(+3kids)	31
Tourist area:	170,000/season= over 20,000ppl/month		
Museum area:			
a. Administration:	-	30	30
b. Yamka village:	31	57ppl	88
<b>b2. Children camp Yamka</b>	<b>18ppl/m</b>	<b>100ppl/y</b>	<b>(118)</b>
c. Vasiljevo (museum stock):	1	18	19
d. Kukuevo(restor.workers):	73	23	96
Podjel'niki Chapel	---	200	200

# Goals and Targets

- Filing data into different forms to be combined in the future
- Co-operation with Kizhi museum, inquiring about their needs and concerns
- Mapping of toilet locations

# Special conditions cons.toilets

- Considering routes in tourist area
- Distance to shore/water bodies
- Hidden from visitors, but easily accessible
- Place to compost/ ability to empty and maintain
- Utilization of toilet wastes/ transportation

=> Not many options

# Entrance zone and Tourist area

1

2

3

- 6 toilets
- about 30 ppl Adm. workers

● 170,000 ppl/y

6

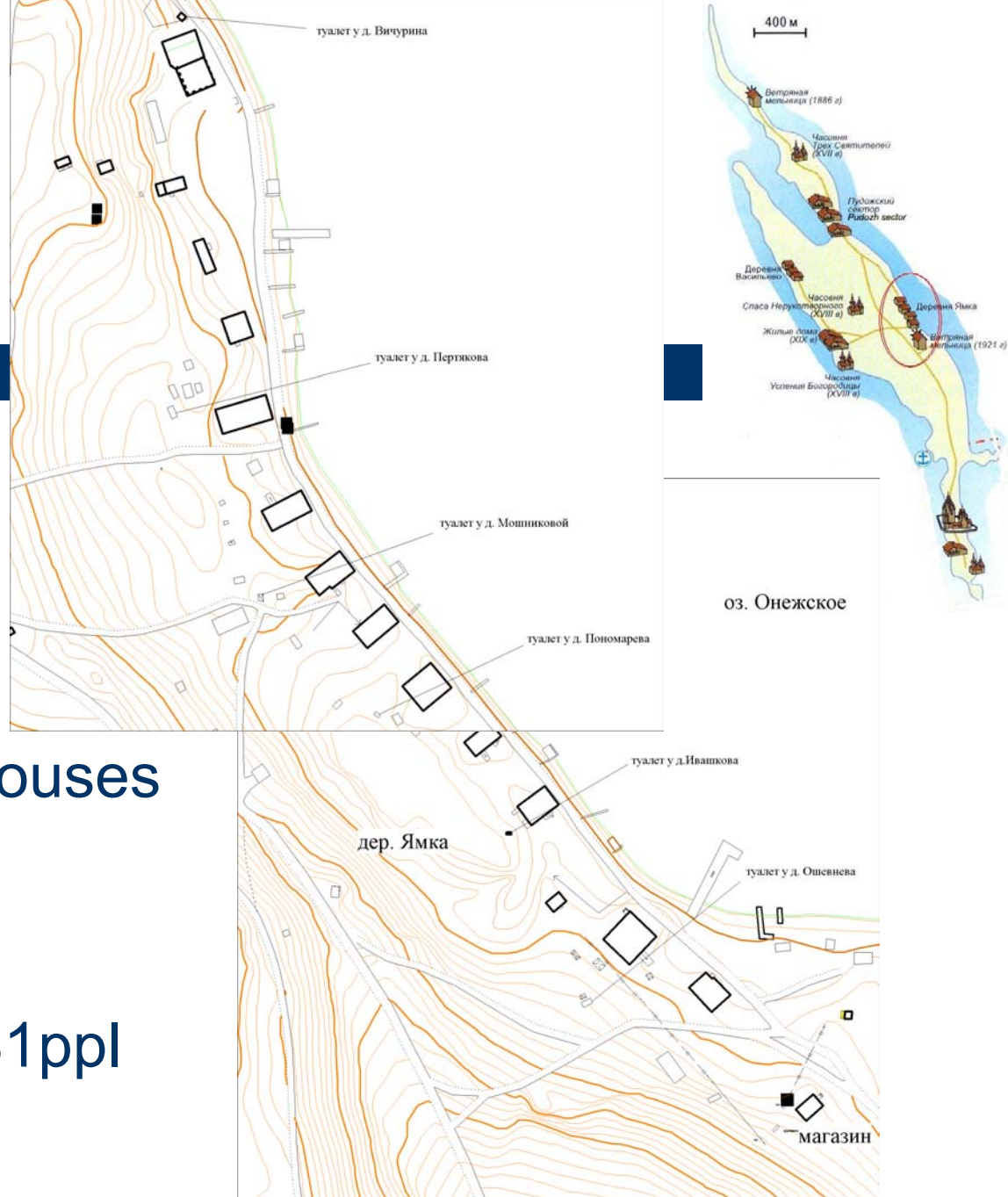
5

4



# Museum area Yamka

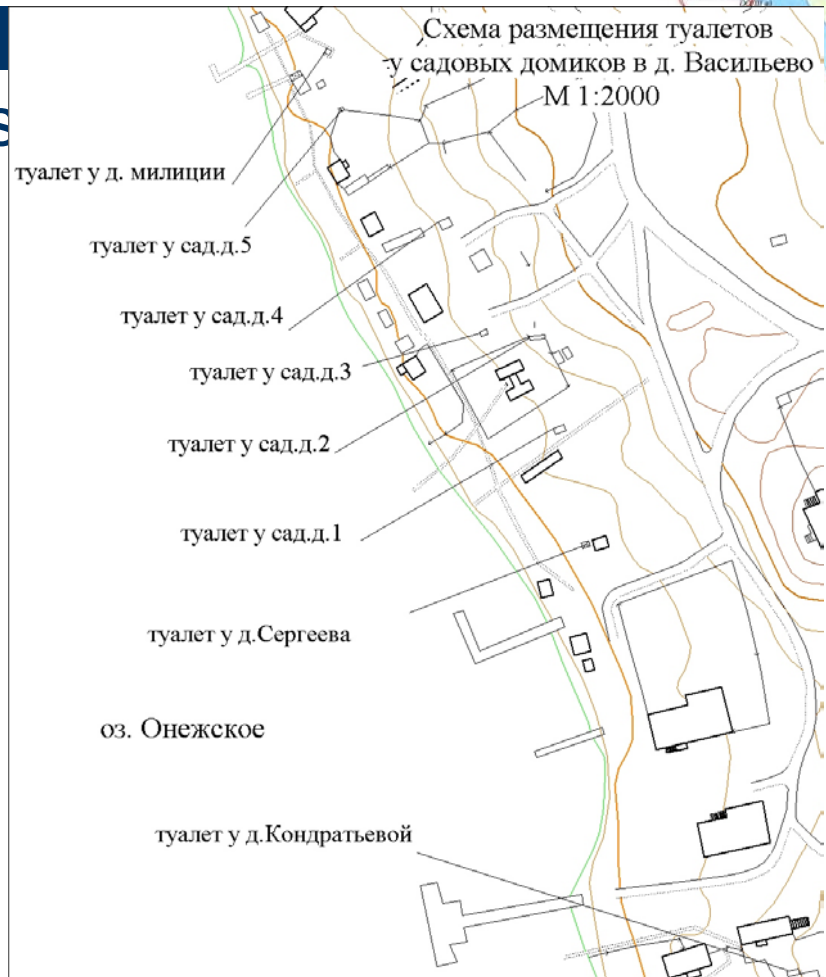
- 11 inhabited houses
- 7 toilets
- 31 permanent  
+57 seasonal=81 ppl



# Museum area

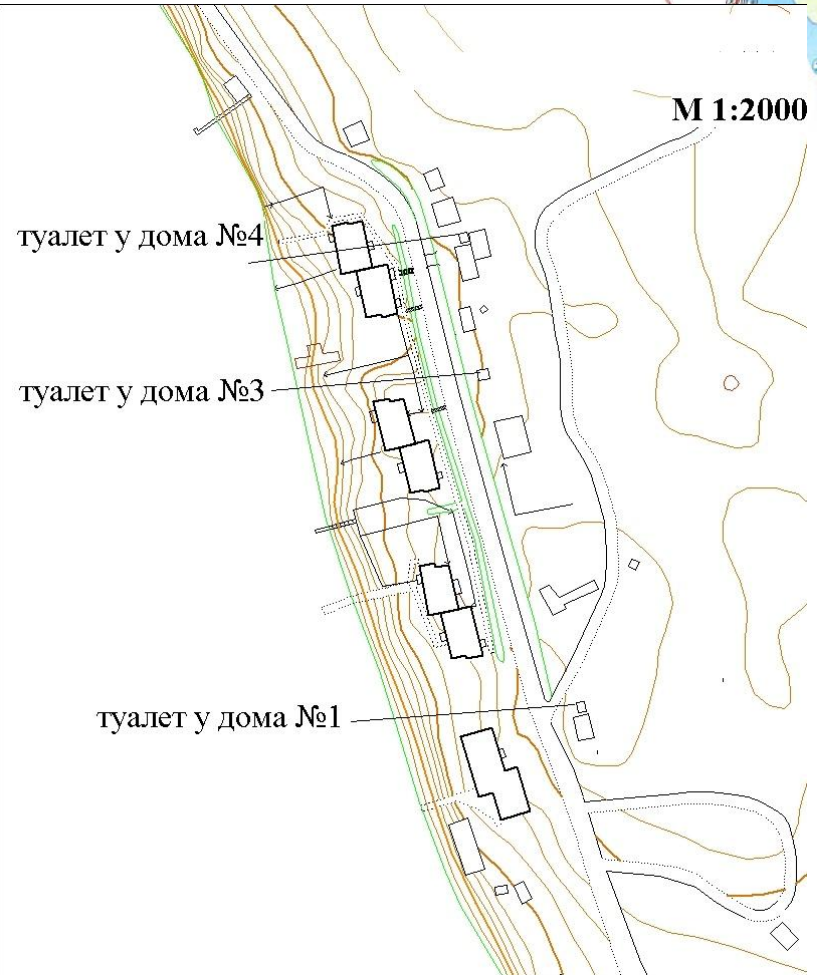
## Vasiljevo (museum stock only)

- 1(4) inhabited houses
  - 2 toilet nearby
  - 1 permanent
- +18 seasonal= 19 ppl



# Museum area Kukuevo (restoration)

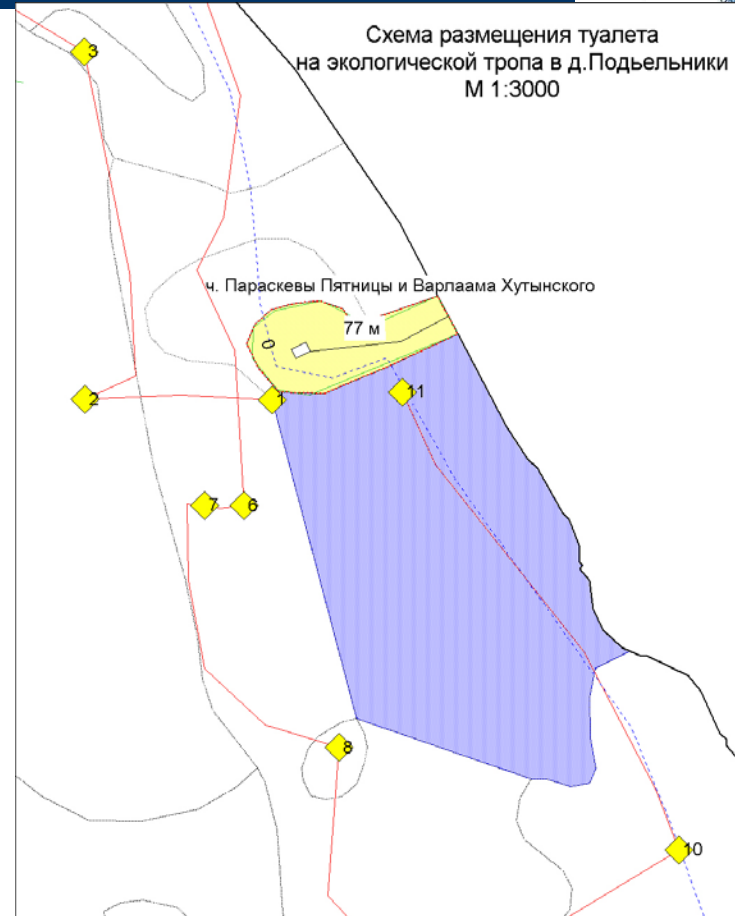
- 7 inhabited houses
- 3 toilets
- 73 permanent  
+23 seasonal= 96 ppl



# Podjel'niki village on mainland

- Chapel of Three Sanctifiers
- Environmental trail
- Planned to be open to public

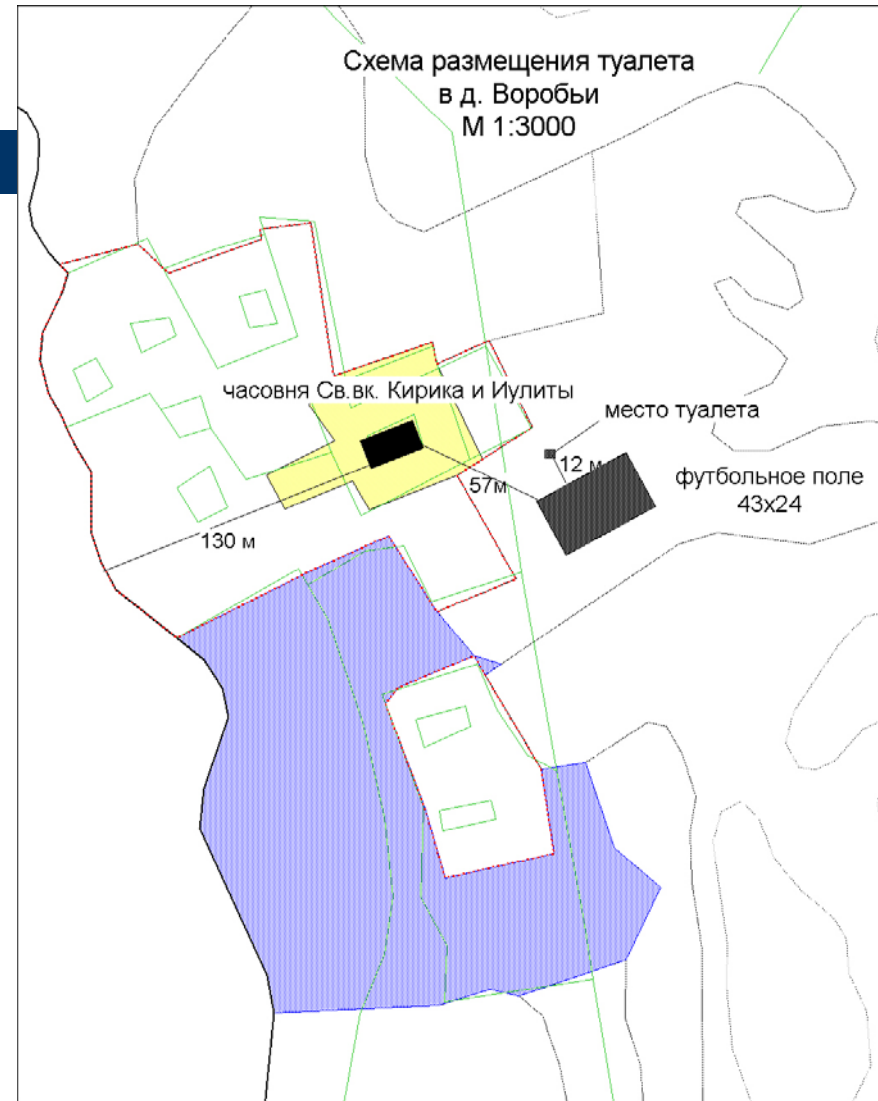
200m off Kizhi island



# Voroby

## Chapel of Kirik and Ulita

- No residence in area
- Used for events and recreation, football field
- Up to 200+ppl





Käymäläseura Huussi ry – Global Dry Toilet Association of Finland

Финляндская ассоциация Международный сухой туалет

Улучшение санитарных условий в деревнях Карелии

Форма 1: Информация об учреждениях

Таблица 1. Информация о расположении учреждения/ организации на английском и русском, конфиденциальная, не общедоступная информация

1. DATE/ДАТА - - -

<b>Name of the location, village</b>		<b>Название населенного пункта, деревни</b>			
Yamka village		деревня Ямка			
<b>Administrative region</b>		<b>Административный район</b>			
Republic of Karelia, Medvezhagorsk district, Kizhi island		Республика Карелия, Медвежьегорский район, остров Кижы			
<b>Demographic statistics of village location</b>		<b>Демографическая статистика в районе деревни</b>			
number of inhabitants		Количество жителей			
permanent inhabitants vs summer residents		Отношение количества постоянных жителей и дачников			
age distribution:		Under 15-y		Возрастной состав:	
15-24-y		25-44-y		менее 15 лет	
45-64-y		Over 65-y		15-24 года	
				25-44 года	
				45-64 года	
				старше 65 лет	
<b>Name of Estate (school, turist resort etc)</b>		<b>Название учреждения (школа, туристический курорт и т.д.)</b>			
The State Historical, Architectural and Ethnographic Museum-Reserve "Kizhi". The house of peasant Ponomarev.		Государственный историко-архитектурный и этнографический музей-заповедник "Кижы". Дом крестьянина Пономарева.			
<b>The Owner/Beholder of Estate</b>		<b>Владелец/Управляющая организация</b>			
The Federal State Institution on Culture		ФГУК (Федеральное государственное учреждение культуры)			
<b>Address of Estate</b>		<b>Адрес организации</b>			
Republic of Karelia, Medvezhagorsk district, Kizhi island, <b>the house of peasant Ponomarev.</b> Postal address: 185000 Russia, Republic of Karelia, Petrozavodsk, Kirov st., building 10A.		Республика Карелия, Медвежьегорский район, остров Кижы, <b>дом крестьянина Пономарева.</b> Почтовый адрес: 185000 Россия, Республика Карелия, г. Петрозаводск, пл.Кирова д.10а,			


Таблица 2. Прочая информация об организации, а также информация для классификации данных

<b>2. RUS/NR</b>	<b>3. RUS/ORE</b>	<b>4. RUS/PRI</b>	<b>5. RUS/USE</b>	<b>6. RUS/INH</b>	<b>7. RUS/MON</b>		
3	14	1	1	5	12		
<b>8. поголовье домашнего скота</b>							
<b>8a. RUS/CH</b>	<b>8b. RUS/DG</b>	<b>8c. RUS/TU</b>	<b>8d. RUS/SG</b>	<b>8e. RUS/PI</b>	<b>8f. RUS/BOV</b>	<b>8g. RUS/HOR</b>	<b>8h. RUS/OTH</b>
---	---	---	---	---	1	---	---
<b>9. Фотографии</b>				<b>9a.</b>			
<b>9b. RUS/WEL</b>		<b>9c. RUS/TOI</b>		<b>9d. RUS/SEP</b>		<b>9e. RUS/OTH</b>	

# Forms and data filing general

# Forms and data filing

## Water supply

# linenum RUS	1.	2.	3.	11.	12.	13.	14.	15.	16.		
	DATE RUS	VNR RUS	ORE RUS	ORW RUS	SUP RUS	RAW RUS	PUR RUS	WEL RUS	NUW RUS		
	 <b>Käymäläseura Huussi ry - Global Dry Toilet Association of Finland</b> Karjalan kylien sanitaation kehittäminen - Development of sanitation in Karelian villages Lomakkeet 2: vesihuolto1 - Forms 2: water supply1										
	Päivämäärä ja luokittelutiedot Date and classification information				Juomaveden hankinta, puhdistus ja kaivo Drinking water supply, purification and well						
1	2008.07.21.	1	1	1	1	2	0	1	1		
2	2008.07.21.	1	2	2	1	2	0	2	2	same well 2	
3	2008.07.22.	1	3	3	1	2	0	2	3		
4	2008.07.22.	1	4	4	1	2	0	2	3		
5	2008.07.22.	1	5	5	1	2	0	2	2	PAJ MAIN WELL (Susanna) same well	
6	2008.07.22.	1	6	6	1	2	0	2	2	same well 2	
7	2008.07.22.	1	7	7	1	2	0	2	4	same well 4 perunasaa	
8	2008.07.22.	1	8	8	1	2	0	2	4	same well 4	
9	2008.07.22.	1	9	9	1	2	0	2	4	same well 4	
10	2008.07.22.	1	10	10	1	2	0	3	5		
11	2008.07.22.	1	10	11	2	2	0	2	6	Paj	
12	2008.07.22.	1	11	12	2	2	0	2	7	Paj	
13	2008.07.23.	2	12	13	2	2	2	2	8	<b>DEREVYANNOE</b>	
14	2008.07.24.	3	13	14	1+Onego	1+2	0	2	9	Yamka (Ponomarev)	
15	2008.07.24.	3	14	15	1+Onego	1+2	0	2	9	Yamka (Moshnikova)	
16	2008.07.24.	3	15	16	1+Onego	1+2	0	2	9	Yamka (Museum territory)	
17	2008.07.24.	3	16	17	1+Onego	1+2	0	2	9	Yamka (Ananyev)	
18	2008.07.24.	3	17	18	1+Onego	1+2	0	2	9		

# Forms and data filing Toilets



## Käymäläseura Huussi ry - Global Dry Toilet Association of Finland

Karjalan kylien sanitaation kehittäminen - Development of sanitation in Karelian villages

Lomakkeet 3: käymälät1 - Forms 3: toilets1

Päivämäärä ja luokittelutiedot  
Date and classification information

Tiedot käymälästä  
Information of toilet

# linenum RUS	1. DATE RUS	2. VNR RUS	3. ORE RUS	30. ORT RUS	31. TOI RUS	32. SEA RUS	33. SEX RUS	
1	2008.07.21.	1	1	1	1	10	5//5	
2	2008.07.21.	1	2	2	1	1	1	
3	2008.07.22.	1	3	3	2	1	1	
4	2008.07.22.	1	4	4	1	1	1	
5	2008.07.22.	1	5	5	1	1	1	
6	2008.07.22.	1	6	6	1	1	1	
7	2008.07.22.	1	7	7	1//2	1	1	
8	2008.07.22.	1	8	8	1	1	1	
9	2008.07.22.	1	9	9	1	1	1	
10	2008.07.22.	1	10	10	2	1	1	
11	2008.07.22.	1	11	11	1	1	1	
12	2008.07.23.	2	12	12	1	4	2+2	
13	2008.07.23.	2	12	13	1	2	1+1	staff only
14	2008.07.23.	2	12	14	1	1	2+2	
15	2008.07.23.	2	12	15	1	1	1	
16	2008.07.24.	3	13	16	1	1	1	
17	2008.07.24.	3	14	17	1	2	1+1	
18	2008.07.24.	3	15	18	1	2	1+1	
19	2008.07.25.	4	16	19	1	2	1+1	Juhani's ve
20	2008.07.25.	4	16	20	1	2	1+1	
21	2008.07.25.	4	16	21	1	2	1+1	
22	2008.07.25.	4	16	22	1	1	1	
23	2008.07.25.	4	16	22	1	1	1	
24	2008.07.25.	4	16	23	1	4	2+2	
25	2008.07.25.	4	16	24	1	1	1	
26	2008.07.25.	4	16	24	1	1	1	
27	2008.07.25.	3	17	25	1	4	2+2	
28	2008.08.19.	3	20	26	1	1	1	
29	2008.08.19.	3	21	27	1	1	1	
30	2008.08.19.	3	22	28	1	1	1	
31	2008.08.19.	3	23	29	1	1	1	
32	2008.08.19.	3	24	30	1	1	1	
33	2008.08.19.	3	25	31	1	1	1	

# Forms and data filing

## Wastewaters



### Käymäläseura Huussi ry - Global Dry Toilet Association of Finland

Karjalan kylien sanitaation kehittäminen - Development of sanitation in Karelian villages

Lomakkeet 4: jätevesi1 - Forms 4: wastewater1

Päivämäärä ja luokittelutiedot					Tiedot jätevesijärjestelmästä						
Date and classification information					Information of wastewater systems						
#	1.	2.	3.	55.	56.	57.	58.	59.	60.		
linenum	DATE	VNR	ORE	ORS	MUN	PUR	SLI	LIT	MAT		
RUS	RUS	RUS	RUS	RUS	RUS	RUS	RUS	RUS	RUS		
1	2008.07.21.	1	1	1	1	1	---	---	---		
2	2008.07.21.	1	2	2	1	0	---	---	---	no production of w	
3	2008.07.22.	1	3	3	1	3	0	1	1		
4	2008.07.22.	1	4	4	1	3	2	1	1		
5	2008.07.22.	1	5	5	1	0	---	---	---		
6	2008.07.22.	1	6	6	1	0	---	---	---		
7	2008.07.22.	1	7	7	1	???	???	???	???	Galina's toilet and gre	
8	2008.07.22.	1	8	8	1	composted	---	---	---		
9	2008.07.22.	1	9	9	1	composted	---	---	---		
10	2008.07.22.	1	10	10	1	5	---	---	---	plastic tan	
11	???	1	11	11	1	composted	---	---	---		
12	???	2	12	12	1	5	2	2	2	metal???	
13	2008.07.24.	3	13	13	1	1	---	---	---		
14	2008.07.24.	3	14	14	1	1	---	---	---		
15	2008.07.24.	3	15	15	1	1	---	---	---		
16	2008.07.24.	3	16	16	1	1	---	---	---	House of Moshn	

# Suggestions for each target group

- Entrance area
  - Tourist area
- 
- ▶ Dry Toilets with large containers for MAIN volume of toilet wastes where they can be removed by sewage lorry/tractor
  - ▶ Dry Toilets with compost where waste removal is difficult/ unpractical with minor wastes, IF compost is properly managed and maintained

# Suggestions for each target group

- Museum area
  - Yamka, Vasiljevo, Kukuevo
  - Podjel'niki
    - ▶ Reasonable and cost-effective to use DT compost boxes, IF managed and maintained properly (only permanent and seasonal workers)
  - Voroby (and Zharnikovo)
    - ▶ Mobile toilet solution to be used in few sites for events and used at fieldwork (Kizhi research unit)

# Possible topics for future study

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- Solid waste management plan for Kizhi
- Quality freshwater supply at Kizhi

# Thanks

- Jury Protasov and Kizhi Administration for arrangements, photos and transport



THANK YOU!