



WP-01 Train the Trainers Script

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- Description: This script reflects the contents of the individual Train the Trainer workshops. These are divided into an introduction to the KEEKS project, its results and an introduction to vegetable food science. Additionally, the methodology for school kitchens assessments and the evaluation and conclusions drawn from the first school kitchen assessment will be presented.
The Train the Trainers workshops use several worksheets, questionnaires and a presentation.
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Table of contents

Table of contents	2
Educational units	3
1. Introduction into the Project KEEKS its results.....	3
2. Introduction to vegetable food science	3
3. Methodology for school kitchen assessments	4
3.1 Questionnaires for the assessment in schools	5
3.2 Measurement and survey of kitchen devices.....	7
4. Evaluation of and conclusions drawn from the first school kitchen assessments.....	8
4.1 Conditions in Poland compared to Germany	9
4.2 First impression of the kitchens - Poland compared to Germany.....	9
4.3 General Conclusions	10
5. Energy saving through investments	11
6. Serving system, assisting the meals and feedback of the children	11
7. Meat less than 3 times a week?	11
Bibliography	13
Legal Information	13

Educational units

The Train-the-Trainers Course consists out of four educational units each of 90 to 120 minutes.

1. Introduction into the Project KEEKS its results
2. Introduction to vegetable food science
3. Methodology for school kitchen assessments
4. Evaluation of and conclusions drawn from the first school kitchen assessments

1. Introduction into the Project KEEKS its results

The first educational unit introduces to the KEEKS-Project, especially to its outcomes. It also includes the discussion of transmissibility from Germany to Poland

The unit uses the slides in the folder:

https://drive.google.com/open?id=1r1L1zh3q8NG_xe9Mwid-aYiTmR1ygcZu

File: CLIKIS_Train-the-Trainer_Presentations.pptx

In addition following topics where raised:

- connection of nutrition and climate change is very unregarded and rather underdeveloped (in existing projects and public debate)
- nutrition as the whole sector is often not taken in account when talking about climate change contribution

[“Smart Campus” project made up a methodology focused on kitchens @Helsinki University]

- own central meter for a (school) kitchen is very good starting point (as many schools in Germany just have general meters for the whole school)
- main products to change: meat and dairy products (avoiding, reducing, changing)
- EU wide regulations not to use food leftovers as animal feed

How are kitchens treating leftovers (from serving)? Do they reuse them (e.g. the next day, freezing)?

2. Introduction to vegetable food science

The second training unit introduces knowledge on plant based foodstuff.

The unit uses the slides: “Recipe optimisation” & “Plant product knowledge”

https://drive.google.com/open?id=1r1L1zh3q8NG_xe9Mwid-aYiTmR1ygcZu

File: CLIKIS_Train-the-Trainer_Presentations.pptx

In addition to the content of the slides different situations and problems where discussed, that could happen while offering plant based foodstuff in schools. These problems depend on conditions according to organization, size and experience of staff in school kitchens.

3. Methodology for school kitchen assessments

This training unit introduces the KEEKS methodology for the assessment and consulting of a school kitchen.

The unit uses the slide from the chapter “KEEKS Procedure for kitchen consulting”

https://drive.google.com/open?id=1r1L1zh3q8NG_xe9Mwid-aYiTmR1ygcZu

File: CLIKIS_Train-the-Trainer_Presentations.pptx

It shows the way the KEEKS team assessed and consulted kitchens in different regions of Germany with all kind of organizational forms and sizes.

The unit includes the introduction to the used energy measurement device and questionnaires for the assessment of menus and ingredients.

3.1 Questionnaires for the assessment in schools

Regarding menus, dishes and ingredients

To assess the menus, dishes and ingredients the chefs have to fill out a questionnaire regarding the top five menus. You find the Questionnaire at:

<https://drive.google.com/open?id=1svPVfVB8U7l0Y0Bfy1xyXf49ncIbSwXY>
 / File: Climate-evaluation_of_foodstuff.xlsx

Kitchen chefs are supposed to fill out the area in the red lines (see below) and afterwards the data has to be copied into the Excel file to automatically calculate the corresponding climate impact.

Name of the school:											
Date	Name of the Menu	Servings	Quantity if not kg	[kg]	Ingredients	Climate factor [kg CO ₂ /kg]	Remark	kg CO ₂ of ingredient	kg CO ₂ of food	kg CO ₂ per menu	
Example	Chevapcici, fried grated potatos (roastis), peas & carrots, semolina pudding	30			2 Beef	12,29		24,58			
					3 Potatoes	0,40		1,20			
School kitchen					0,2 Oil	2,71		0,54			
Secondaryschool					0,825 Eggs	2,04		1,68			
Lindlar		15	eggs		1 Wheat semolina	0,34		0,34			
Menu-Assessment					3 Milk	1,44		4,32			
reagarding climate					1,5 Vegetables	0,80		1,20	33,87	1,129	
		1			0			0,00			
					0			0,00			
					0			0,00			
					0			0,00			
					0			0,00	0,00	0,000	
		1			0			0,00			
					0			0,00			
					0			0,00			
					0			0,00			
					0			0,00	0,00	0,000	
		1			0			0,00			
					0			0,00			
					0			0,00			
					0			0,00			
					0			0,00	0,00	0,000	
		1			0			0,00			
					0			0,00			
					0			0,00			
					0			0,00			
					0			0,00	0,00	0,000	
							Average value Climate factor per meal			0,000	
							Vergleichswert 22 Kölner Grundschulen				0,552

Regarding kitchen processes and organisation

To assess processes in and the organisation of the kitchen the chefs have to fill out a questionnaire that lies in:

<https://drive.google.com/file/d/1S1iFTqYTGRkSir1H3UFDxLi0m1Y7bSnC/view?usp=sharing>
 File: Questionnaire_Prozesses-Organisation-of_school_kitchens.xlsx

CLIKIS-Questionnaire for school kitchens			
<i>This questionnaire should be completed by the members of CLIKIS while questioning the school.</i>			
Name of the school:			
Contact person of the school:			
Contact person CLIKIS:			
Date of data collection on site:			
Date of the complete data compilation:			
1. Short description of the kitchen and catering type and the process steps: Catering / fresh kitchen / Cook and Chill or mixed kitchen-type? Kiosk?			
2. What five main courses have been served in the last week?			
1.		4.	
2.		5.	
3.			
Please indicate the ingredients on an extra sheet!			
Was the food on offer this week typical?		yes	no
If not, what is usually different?			
3. Are there permanent additional offers such as fruit, salads, snacks or desserts that serve as lunch? If so, how much per person per day?			
4. Are drinks purchased? If so, how many millilitres of which drinks per person per day? Is there a tap in the cafeteria?			

3.2 Measurement and survey of kitchen devices

In order to evaluate to energy consumption and therefore the climate impact of the kitchen devices the chefs have to do a survey. The blank document for that is:

<https://drive.google.com/file/d/14JZ8TZ8apRDxe8zKjGZPJTF7P7fRoz3-/view?usp=sharing>
/ File: Survey_Measurements_Kitchendevices.docx

Measurements and Survey of kitchen devices

Measurement of electric consumption of kitchen devices with Energy-Logger

Logger Nr.	Device	Start of Measurement Date and Time	Start of Measurement Date and Time	Consumption [kWh]
⊘	⊘	⊘	⊘	⊘
⊘	⊘	⊘	⊘	⊘
⊘	⊘	⊘	⊘	⊘
⊘	⊘	⊘	⊘	⊘

4. Evaluation of and conclusions drawn from the first school kitchen assessments

The fourth educational unit differs from three previous ones, because the idea was not longer to merely transfer knowledge and competences from the German KEEKS- to the Polish CLIKIS-project, but to evaluate the experiences in Polish school kitchens by both Polish and German trainers.

This training took place after the first three visits in the CLIKIS-Project-Schools. Before these visits the schools had been introduced into the KEEKS-Ideas and the KEEKS-CLIKIS-Methodology.

What did we notice? What seems important?

First impression of visiting school kitchen

First by the new trainers (e.g. Tomasz and Patrycja from PNEC), than supplemented by experienced trainers

- Nearly only fresh ingredients in Polish school kitchens
- More kitchen staff in Polish than in German kitchens
(Kitchen staff's financial remuneration is somewhat higher in Germany, but it is comparable: in both countries a bit over minimum wages.
- Different equipment:
School kitchens in Poland have tilting frying pans and classic ovens; but they don't have convection ovens.
- There is not so much equipment in Poland as in Germany
→ especially less freezers and refrigerators, because of the fresh food
→ in individual cases, necessary equipment is missing or is very outdated.
- Usage of equipment until it is broken => no money for investment => rather repair it more often.
- Some of this equipment is quite old => replacing very old and broken equipment rather than trying to fix it(e.g. many old ovens in 1st kitchen) => energy saving (consider combi steamer usage [=> **maybe practical teaching in chef's training**])
- Mostly no separate metering of kitchen consumption of heat, gas and electricity (except for 1st kitchen)

Leftover food

- Waste figures seem to be very small in Poland
 - ascending age in several servings helps staff to adjust amounts
 - organization and communication with school seem to function quite well (compared to Germany)
- Very low convenience food level: all cooked fresh, only some frozen product (e.g. fruit in winter, fish)
- Serving on counter - but with individual feedback => e.g. how many pirogis and some table serving of soup e.g. in 2nd school

Meal plans

- 3 times meat a week and fish every second week

=> For 20 supply days (4 weeks) that means in average:

- 11 times pork or chicken,
- 1 time beef (more expensive than pork or chicken),
- 2 times fish
- 6 times vegetarian meal

Special features of individual kitchens

1st Kitchen is not officially supported (independent cooperative):

- less staff than in the other kitchens
- thoroughly accounting and pricing
- only fresh and local supplies (mainly from same municipality) → this was similar in the other kitchens
- meals where more expensive because of the lack of public co-financing

3rd Kitchen:

- no dishwasher but huge hot water sterilizer
→ This means a lot of manual work, some dangerous working conditions and probably a waste of energy.

4.1 Conditions in Poland compared to Germany

CO₂ in the electricity mix:

D: 537 g/kWh (2017, UBA) Pl: 781 g/kWh (2016, KOBIZE) --> Use of natural gas for cooking makes more sense in Poland than in Germany from a climate protection perspective

→ Higher CO₂ reduction is possible when using more efficient electronic devices.

Costs per kWh (incl. all taxes, levies etc.):

D: approx. 30 EUR-cents; Pl: approx. 15 EUR-cents --> longer amortisation periods for the purchase of energy-efficient equipment in Pl

4.2 First impression of the kitchens - Poland compared to Germany

Dishes/Cooking

A lot of fresh preparation --> daily delivery --> little stock → fewer refrigerators and freezers

Potatoes are peeled in the kitchen (with or without peeling machine).

More staff working in kitchen (in relation to meals served).

Kitchen equipment

Equipment is in average older.

Fewer freezers and refrigerators as more fresh food is available and daily delivered

Often the use of deep freezer chest instead of freezer cabinet is sufficient. The chests usually use less energy.

No combi-steam-ovens, partly also no convection ovens but classic stoves

In addition: (gas) stoves (plates), stool cookers and tilting frying pans

Frequent use of gas cooking appliances

(Older) Gastro front-loading dishwashers with (warm) pre-rinsing

4.3 General Conclusions

Gas use

Gas use in cooking is good, especially when otherwise using the Polish electricity mix with high CO₂ rate because of electricity production mainly from coal.

→Gas use should be maintained.

Convection ovens

Convection ovens save energy and can be used for a broad variety of dishes

→When classic electric ovens brake down, they should be replaced with convection ovens

Freezing and cooling

The energy consumption for freezing and cooling in an average Polish school kitchen should be lower than in Germany due to less store of food.

Rinsing

Energy saving while rinsing

→Pre-rinse as little as possible and only with cold water

5. Energy saving through investments

Freezers

Modern freezers use approx. 60 % less electric energy than old ones.

This could amount to the use of approx. 1.400 kWh/year instead of 3.500 kWh/year per appliance. (Absolute numbers for 600 litre freezer cabinet; smaller devices and freezer chests use less energy.)

Refrigerators

Modern freezers use approx. 56 % less electric energy than old ones

This could amount to the use of approx. 350 kWh / year instead of 800 kWh / year per appliance.

Dishwashers

Modern dishwashers use approx. 35%, less electric energy than old ones

Cleaning the dishes for 200 meals/day could amount to the use of approx. 2.600 kWh instead of 4.000 kWh per appliance and year.

6. Serving system, assisting the meals and feedback of the children

- Serving food at the counter
- Individual wishes for "more" or "less" are possible.
- Second help is usually possible.
- Assisting the meals at the tables is not organised but happens every now and then.
- There is no formalized feedback system (e.g. Mailbox for suggestions and problems) in Polish school kitchens, we visited.

Conclusions:

- Assisting the meals for young children (first two to four school classes) in Germany has proven to achieve
 - Better introduction of children to healthy and new dishes
 - Less plate leftovers
 - Greater appreciation of food
- If the food is served in a communicative way and the students are addressed, this already helps a lot.
- A formalised feedback system can get shy students to express themselves. But it is more necessary in (German) kitchen System, where the production of the meals is outside, so students cannot talk to the kitchen chefs.

7. Meat less than 3 times a week?

Discussion, whether it is possible to offer less than three meat dishes per week.

- It's better to argue positively: Not "Less meat" but "More and good tasting vegetable food"

- Try to introduce new plant based dishes and eventually meat substitutes (e.g. burger patties)
- Beforehand research: Most children (depending on age) prefer at least some vegetarian dishes. The problem is, that they mainly like sweet dishes, which are not healthy.
-
- Question: how far is meat- reduction discussion in Poland? Is it viable to suggest change to more vegetarian diet in Poland?
 - open up new options (and increase variety of meals)
 - traditional meal with sausage, beans and tomato sauce
 - Minced meat is not so popular in Poland because the parents have concerns that unhealthy ingredients are also processed here.

Bibliography

KEEKS-Leitfaden

Legal Information

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