# Proposals to finance energy projects of developing countries by the voluntary compensation of greenhouse gas emissions

## Global cooperation to overcome poverty and the lack of prospects

Dr.-Ing. Dieter Seifert

9. Solar Conference of INTERSOL, Salzburg
Society to promote international solidarity
25. May 2019

http://solarcooking.org/Seifert

Financial Times Comment, *June 11, 2008*

# Response to Martin Wolf by Jeffrey Sachs

(The Food Crisis Sustaining growth is the century's big challenge by Martin Wolf)

*"The market system fails to solve four fundamental classes of problems: ecosystem functions (the bio-geophysical commons); population; extreme poverty (because of the very real dynamics of poverty traps); and technological pathways needed for sustainability. These are solvable problems. They require collective action, as they are fundamentally in the character of the public good. Yet for the same reason they are not solved. Part of the barrier is the ideology of market economics itself, which often denies these problems and therefore is short on producing practical tools and solutions."*

Jeffrey D. Sachs

http://www.sachs.earth.columbia.edu/commonwealth/jeffarticles.php

# Contribution to:

Cooperation with technologies
for sustainable development

and

To overcome the poverty trap of developing countries

Create a solution for the two major global challenges:

Poverty in developing countries
and the climate change

Collaborations for financing
emission reduction projects

Create millions of jobs per year by
Appropriate Technology (AT) and
spreading of garden culture

Documentation: http://solarcooking.org/Seifert

# „Sometimes I would like to scream"*

*"Of course, we climate scientists have been aware for a long time that the escape door of climate change is open only at a hand's breadth. This door could shut forever very soon, for example, by the just mentioned release of methane gas from terrestrial and marine sources. And if we, indeed, achieve a global warming of five or six degrees in this century, then on this planet there will be no high-civilization as we know it today."**

* Translation from German, original see Appendix 5

Hans Joachim Schellnhuber

Direktor of Potsdam-Instituts für Klimafolgenforschung

Interview with „DIE ZEIT", 26. 3. 2009

http://www.sonnenseite.com/Interviews,Manchmal+koennte+ich+schreien,20,a12631.html

# „do inform yourself!“
## Luisa Neubauer, invited article, DIE ZEIT, 9. May 2019

*„We expose ourselves, at first slowly, than with a great bang, to the greatest catastrophes of the planet and allow by non-action ecological collapse which is a greater threat to our life than the costs and consequences of any measures for environmental protection today.*

* Translation from German, original see Appendix 5

# Press release of the German Federal Environmental Agency from 20.11.2018

*"High costs due to failure to protect the environment"*

*"A ton of $CO_2$ causes damage of € 180 Federal Environmental Agency sets updated cost rates"**

* Translation from German, original see Appendix 5

https://www.umweltbundesamt.de/presse/pressemitteilungen/hohe-kosten-durch-unterlassenen-umweltschutz

# About 25 euros are needed to avoid 1 ton of $CO_2$ in household energy projects of developing countries

Domestic equipment:
1 Efficient fuelwood stove, 1 Parabolic solar cooker,
2 Thermos-baskets, 1 Thermos jug,
PV-Panel 40 W and 3 LED-lamps
(if possible create of local workplaces)

Investment e.g. 280 Euro, depreciable time 7 years
Service costs: 40 Euro/year
$CO_2$ emission saving: 4 tons/year

# Calculation of costs for saving 1 ton of $CO_2$-emission by (a) cooking and (b) PV in households

| | | |
|---|---|---|
| **Example:** household appliance (a) + (b): 280 € | | |
| (a) thermal energy: 1 efficient fuelwood stove (30 €), 1 paraolic solar cooker (100 €), | | |
| equipment for cooking with retained heat (50 €): 2 heat conserving baskets, 1 termos flask | | |
| (b) panel PV 40 W and 3 LED lamps (100 €) | | |
| Local production (OSAT) if possible | | |
| Spreading and service by non profit institutes (proposal: ARTIS) | | |
| Investment A per household (HH) for (a) and (b) | 280 | €/HH |
| Depreciation life T | 7 | year |
| Depreciation K_1 = A/T | 40 | €/year/HH |
| Runnig costs K_y (witout spreading and service) | 20 | €/year/HH |
| Annual costs per household: K_HH = K_1+K_y | 60 | €/year/HH |
| **Saving E_1 of CO2e emission per household (a) 3,5 t/year, (b) 0,5t/year** | **4** | **t/year/HH** |
| Annual costs per ton of saved CO2-emission: K_CO2 = K_HH/E_1 | 15 | €/t |
| Annual costs for spreading and service per ton of saved CO2-emission | 10 | €/t |
| **Total costs of saving the emission of 1 ton of CO2e** | **25** | **€/t** |
| **with the proposed conditions** | | |

# Overcoming poverty and lack of prospects in developing countries

A) Transfer of know-how: Open Source Appropriate Technology (OSAT)

B) Innovation Institutes for the realization of opportunities (proposal: African Research and Technology Institutes for Sustainability - ARTIS)

C) Financing: Opportunities by compensation of emissions

D) Garden cities instead of slums and "reception centers"

Solares Kochen in Mali
Süddeutsche Zeitung LKR, 30. Mai 1994
Artikel: „Wunder dauern etwas länger“

# Financing of household energy projects through compensation of greenhouse gas emissions

Equipping households in developing countries with sustainable technology can be financed by compensating the approximately 800 million tons of $CO_2e$ savings per year from 200 million households.

At a price of 25 € per ton of $CO_2e$, the compensation cost would be 20 billion euros per year (2 billion euros in the first year in a 10-year build-up phase).

Voluntary compensation can make a significant contribution.

School kitchen,
Zaroli-Monastery, Gujarat, 2004

Cooking maize porridge
with charcoal, Lusaka, 2010

# Opportunities of combining poverty reduction and climate protection with voluntary compensation of emissions

For voluntarily offsetting greenhouse gas emissions of households and small enterprises, it seems sensible to replace the "official", very lengthy CDM procedure, which has not proven successful.

Reliable organizations can support projects to connect poverty reduction and climate change mitigation of developing countries

It may be used as a simplified but transparent process to generate Voluntary Emission Reductions (VERs).

It seems important to avoid trade with the VERs

# Proposals for principles of voluntary compensation of greenhouse gas emissions for poverty reduction and climate protection

1. The projects are funded, prepared and published by charitable organizations and their partners in developing countries.

2. Focus is on projects for households, small businesses and schools in developing countries.

3. The Voluntary Emission Reductions (VERs) are issued to the donor. They are not traded.

4. Evidence of emission savings or permanent carbon storage is provided through transparent presentation on the Internet.

5. Because of the voluntary nature of compensation, no UNFCCC-CDM procedure is necessary.

# Why not trade with the Voluntary Emission Reductions (VERs)?

Payment of the VER price serves
the intended project
and creates the desired personal relation.

By trade the clear relation of the buyer of the VERs
to the social benefits of the project would be lost.

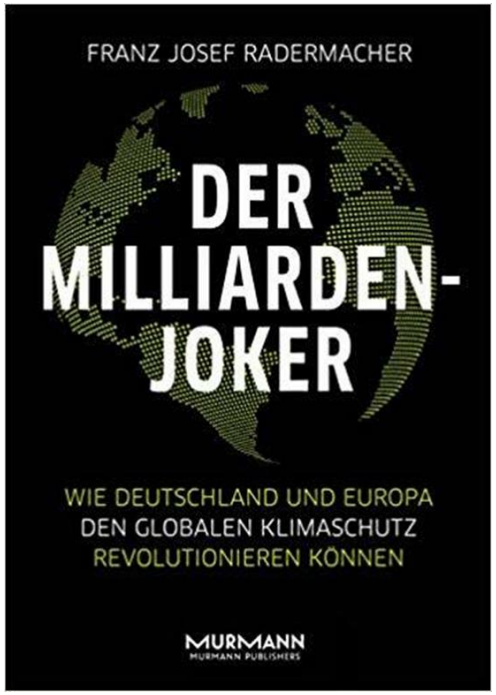
Trade would only make sense if it were value-adding,
It is not, but creates uncertainty
and the risk of loss of value.

Very bad experiences with CDM should not be repeated.
There is no need for this market.

# Compensation of air travel emissions: Example INTERSOL

*"With the transfer of the proposed amount, you promote the use of solar technology and the organic farming of our southern partners"**

# F.J. Radermacher: How Germany and Europe can revolutionize climate protection*




*"Voluntary climate neutrality, better yet climate positivity of "Top Emitters", especially through global compensation projects, is an essential key to achieving the two-degree goal. This can be done, for example, through projects of the "no-use" type, such as the laying up of certificates of the European certification system, as well as the payment of compensation for the laying up of coal-fired power plants ... "**

* Translation from German, original see Appendix 5

https://www.fawn-ulm.de/wp-content/uploads/2018/10/Der_Milliarden-Joker-Hauptthesen.pdf

# Examples of recommended compensation projects: household equipment, small businesses, schools

- Household energy equipment
- Household biogas plants combined with solar cookers
- Small businesses: preserving food and water sterilizing
- Solar bakeries/cafés
- Gardens and nurseries with biochar sinks associated with soil improvement
- Equipment of school kitchens

# Steps to determine the $CO_2$ emission savings

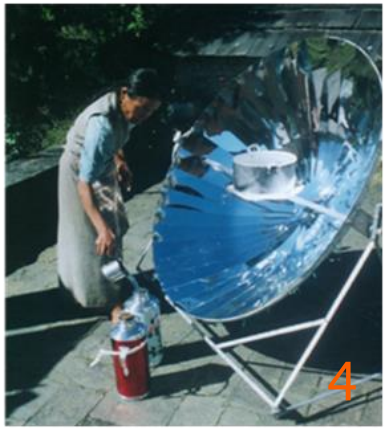
1. Define project (project region, project scope, data collection)
2. Arrange cooperation
3. Create project documentation: Project Design Document (PDD)
4. Determine baseline emissions $EB_y$ *in year y*
5. Consider "Suppressed demand“ (rising $Eb_y$)
   https://cdm.unfccc.int/methodologies/Workshops/cdm_standards/s3_wb.pdf
6. Calculate expected project emissions $PE_y$ after implementation of the project
7. Difference of project emission to baseline emission including suppressed demand is annual emission savings $ER_y$

# Example 1: Household energy equipment

One-third of humanity uses wood or charcoal for cooking - with catastrophic consequences, in particular by cooking in urban households with traditionally produced charcoal (see “Traditional charcoal in Africa – A continent in danger”)
https://solarcooking.fandom.com/wiki/Dieter_Seifert


Equipping 300 million households with around 1 kW of household energy means 300 GW of installed capacity. This corresponds to more than 200 nuclear power plants, but without their disadvantages and with less than 5% of the investment costs.





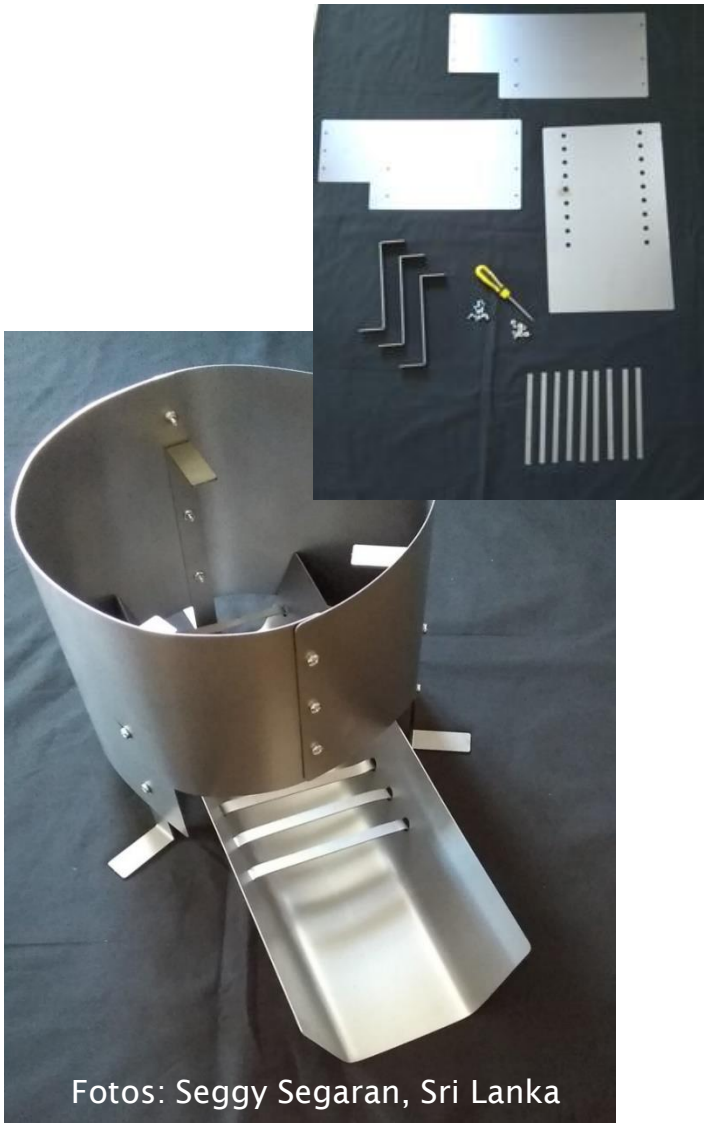

Each household can save about 4 tons of $CO_2$ emissions per year, a total of 1,200 million tons annually, more than the emissions of Germany and Austria together.

1 PV und LED-Lamps
2 Thermos-Basket
3 Efficient Cook Stove
4 Parabolic Solar Cooker

# Adaptation of Ben-Stove

As an Open Source Appropriate Technology, the construction of the Ben-Stove (bottom left images) can be easily adapted to local requirements.
The pictures on the right show an adapted design in Sri Lanka (to avoid welding the tripod).

[Ben 2 and 3 Ben Firewood Stoves]



Fotos: Seggy Segaran, Sri Lanka

# Annual fuel consumption of a household and possible savings

## Comparison with traditional three-stone fire (with 10% efficiency)

| Fuel Consumption per Year | Equipment | 3-Stones-firewood | Ben 2 | Charcoal tradit. | Charcoal improved |
|---|---|---|---|---|---|
| | Fuel | Firewood | Firewood | Charcoal | Charcoal |
| | Unit | Assumptions | 03.02.2015 | Assumptions | Assumptions |
| **Net Energy Demand E_eff per Household per Year** | MJ/Year | 6.000 | 6.000 | 6.000 | 6.000 |
| a) Fuel Consumption B per Household per Year | kg/Year | 4.000 | 985 | 1.101 | 667 |
| Percentage of Saving f_thermo via Thermos Technique | | 45% | 45% | 45% | 45% |
| Percentage of Saving f_solar via Solar Technique | | 45% | 45% | 45% | 45% |
| b) Fuel Consumption including Thermos Technique | kg/Year | 2.200 | 542 | 550 | 367 |
| c) Fuel Consumption including Thermos- and Solar Technique | kg/Year | 1.210 | 298 | 303 | 202 |
| **Conversion to Fuelwood Consumption per Household per Year:** | | | Short rotation plantation | Thick stems and branches for charcoal | |
| Mass Ration Wood/Charcoal (IPCC default value) | kg/kg | | | 6 | 6 |
| a) Without Thermos- and Solar Technique | kg Wood/Year | 4.000 | 985 | 6.005 | 3.999 |
| b) Including Thermos Technique | kg/Year | 2.200 | 542 | 3.303 | 2.200 |
| c) Including Thermos- and Solar Technique | kg/Year | 1.210 | 298 | 1.816 | 1.210 |

Result: The annual consumption of wood per household can be reduced from 4000 kg to approx. 300 kg.

Higher savings are possible with the replacement of traditional charcoal

# Traditional charcoal in African households – A danger to the continent

http://solarcooking.org/Seifert /Publications

| Saving of CO2-Emission from Transition to Ben Stoves, Thermos- and Solar Technique | | |
|---|---|---|
| Emission Factor EF Wood (IPCC 2006) | kg CO2/MJ | 0,112 |
| Net Calorific Value NCV Wood (UNFCCC default value) | MJ/kg Wood | 15 |
| Fraction f_n of non-renewable biomass | | 0,85 |
| Saving of CO2-Emission per kg Wood | kg CO2/kg Wood | 1,428 |
| Saved Amound of Wood = 6000 kg - 300 kg | kg Wood | 5700 |
| Saved CO2-Emission per Household per Year | t CO2/Year | 8,14 |

For traditional kilns, each household consumes about 6 tons of logs and thick branches each year.
To reduce this wood consumption with the help of Appropriate Technology corresponds a saving of approx. 8 tons of $CO_2$ emissions per year,

avoiding the emission of a car ride of about 53,000 km, i.e.1.3 times the length of the equator (53,000 km * 0.15 kg $CO_2$/km) per year!

# Example 2 for possible compensation projects: Household biogas plants with solar cookers

The "Smokeless Villages" in India are examples of this type of projects

https://vignette.wikia.nocookie.net/solarcooking/images/5/58/Smoke_Free_Village_February_2005.pdf/revision/latest?cb=20080215212110

Photos:
Deepak Gadhia and Jagadeeswara Reddy:
„Smokeless Villages“

# Example 3 for possible compensation projects: Preserving food and water sterilizing

Boiling water with the solar cooker (about 40 liters per sunny day with SK14) (1)

Solar drying of food (2)

Producing fruit juices (3)

Canning and preparing jam, baking … (4)


1


Source: Dr.-Ing. J. Blumenberg, Lehrstuhl für Thermodynamik, TU München (German-Indian-Solar-Drying Project)
2


3


Products of Imma Seifert with SK14
4

# Example 4 for possible compensation projects: School kitchens (with school workshops)

Equipping school kitchens in developing countries with highly efficient firewood stoves, solar cookers and thermos technology is an urgent task that has a particularly high potential for reducing emissions

Traditional school kitchen in Zaroli-Monastery in Gujarat (2004)

Renée Schulz: “Sonne macht Schule”; Mohrvilla München

Sama Shrestha, CTR Nepal

# Jobs for Open Source Appropriate Technology (OSAT)

The investment costs per workplace according to the Appropriate Technology (AT) are in the range of a few thousandths of the cost of a workplace in the high-tech area. Misleading would be the attempt to create cheap industrial jobs in Africa. This work is easily transferred to robots in today's industrial world (Industry 4.0).

The picture shows the cutting of high-gloss aluminum sheets in a workshop in Bolivia for production of SK-type solar cookers.

Projekt SOLIN
of J. A. Garrido Vázquez, Madrid

# Example 5 for possible compensation projects: Biochar production and storage in gardens and nurseries

Not just emission reduction projects, but also sink projects where biochar is made from biowaste or invasive plants (such as water hyacinth) and biochar is permanently stored in the ground.

# Biochar storage in the soil for soil improvement and as a carbon sink

The "carbonization" of the soil through the permanent incorporation of bio-carbon (biochar) can help decarbonize the atmosphere.

This allows financing of garden settlements as carbon sinks.

s.a. Ute Scheub, Stefan Schwarzer:* The Humus Revolution "How we heal the soil, save the climate and create the nutritional turnaround". oekom-Verlag München, 2nd edition 2017

# Backyard Gardening
# Sustainable yield improvement through soil improvement

Agric Society Switzerland Ghana - ASSG

https://assg.info/125/projekte/ertragssteigerung-backyard-gardening

*"The situation is quite different in the villages behind the houses. In the village there is usually only a rudimentary water supply by means of wells or using roof water.*

*This provides a modest amount of water throughout the year for Backyard Gardening. Depending on the plant variety, it takes between weeks and 4 months between sowing and harvesting.*

*This means that a minimum of 3 harvests per year is possible."**

* Translation from German, original see Appendix 5

# Gardens in drylands

## Prevent desertification and reverse it

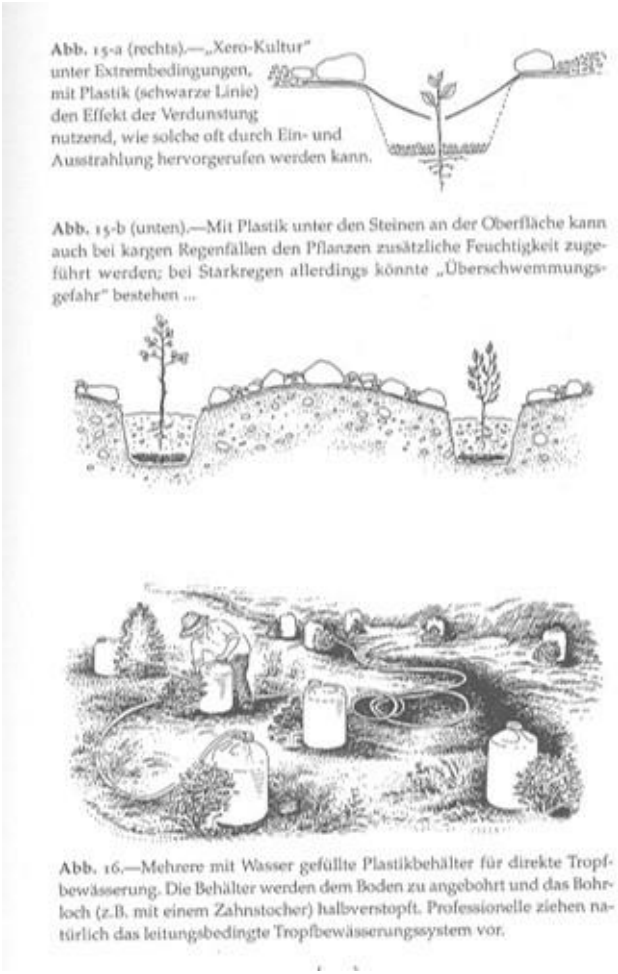


Abb. 15-a (rechts).—„Xero-Kultur" unter Extrembedingungen, mit Plastik (schwarze Linie) den Effekt der Verdunstung nutzend, wie solche oft durch Ein- und Ausstrahlung hervorgerufen werden kann.

Abb. 15-b (unten).—Mit Plastik unter den Steinen an der Oberfläche kann auch bei kargen Regenfällen den Pflanzen zusätzliche Feuchtigkeit zugeführt werden; bei Starkregen allerdings könnte „Überschwemmungsgefahr" bestehen ...

Abb. 16.—Mehrere mit Wasser gefüllte Plastikbehälter für direkte Tropfbewässerung. Die Behälter werden dem Boden zu angebohrt und das Bohrloch (z.B. mit einem Zahnstocher) halbverstopft. Professionelle ziehen natürlich das leitungsbedingte Tropfbewässerungssystem vor.

Günther and Mary Anne Kunkel:
JARDINERÍA EN ZONAS ÁRIDAS / Gärten und Gärtnern in Trockengebieten. ed. Alhulia, Salobreña/Granada
www.lafertilidaddelatierra.com ISBN: 84-95136-43-0

# Proposal for a pilot garden community financing by credits for permanent storage of biochar in the garden soil

Pilot garden community with 2000 family gardens,
each 500 square meters united to a city core. Area requirement of the city core is about 1 sq. km

In addition, a 35 times as large common and professional area (commons, trade, etc.).

On an area of the size of Zambia (about 750,000 square kilometers), about 1/3 billion people could lead a sustainable life in garden communities

# Creating millions of new jobs each year in Africa

In efforts to overcome unemployment, we should follow the recommendations of E.F. Schumacher, considering: Small is Beautiful, chapter “Social and Economic Problems Colling for the Development of Intermediate Technology".

Suggestions for OSAT and ARTIS can be found in
"OSAT: Open Source Technology for Africa“
http://solarcooking.org/Seifert

It is the humane solution to social issues
where funds from the compensation of greenhouse gas emissions
can make a decisive contribution.

# Summary

- To overcome the climate and poverty crisis, take advantage of the opportunities to voluntarily offset emissions
- Voluntary compensation can overcome the disadvantages of CDM, especially in household, small business and school projects
- Using Appropriate Technology to create millions of jobs each year in developing countries
- Ensure equitable, sustainable development through public-committed innovation institutes (proposed: ARTIS)
- Recognize garden cities as a breakthrough innovation

# Thank you

The future belongs to the gardens and the sustainable technologies,
not to the slums

Garden
on the edge of the desert
of G. and M.-A. Kunkel
in Vélez Rubio/Almería

See http://solarcooking.org/seifert

# Appendix 1

Statement of
UN Secretary-General Antonio Guterres

# UN Secretary-General Antonio Guterres from his Davos speech (Jan. 2019)

*"And then the climate risk, and I think the climate risk is the most important systemic risk for the near future. I believe we are losing the race. Climate change is running faster than we are. And we have this paradox: the reality is proving to be worse than scientists had foreseen, and all the last indicators show that. We are moving dramatically into a runaway climate change if we are not able to stop it, and at the same time, I see the political will slowing down. This when technology is on our side and we see, more and more, the business community ready to respond in a positive way, and the civil society more and more engaged. But the political will is still very slow, and we see lots of subsidies to fossil fuels, we see carbon pricing in a very limited way, and we see many still putting into doubt whether climate change is a threat. But in my opinion, it's the most important global systemic threat in relation to the global economy."*

https://www.weforum.org/agenda/2019/01/these-are-the-global-priorities-and-risks-for-the-future-according-to-antonio-guterres/

# Appendix 2
# Extracts from:

## The Age of Sustainable Development

International Growth Centre public lecture

**Professor Jeffrey D. Sachs**

*Director of The Earth Institute, Quetelet Professor of Sustainable Development, Professor of Health Policy and Management, Columbia University*

and

## The Food Crisis

Sustaining growth is the century's big challenge

By Martin Wolf

Financial Times Comment, *June 11, 2008*

Response to Martin Wolf by Jeffrey Sachs

JEFFREY D. SACHS
International Growth Centre
London School of Economics
4 February 2015

## Challenges to Meet the Sustainable Development:

- Rapid Technological Transformation
- Equity in Social Service Provision
- Community Protection of Natural Resources
- Strengthening of Local Governance
- Sharing Work, Learning, and Leisure
- Restraining Arbitrary Corporate Power
- Responsible investing and Financial Markets
- Re-Democratizing Our Democracies
- Identifying Shared Global Values

JEFFREY D. SACHS
International Growth Centre
London School of Economics
4 February 2015

CRITICAL “SUSTAINBLE SYSTEMS” PRIORITIES:

- SUSTAINABLE ENERGY SYSTEMS
- SUSTAINABLE AGRICULTURE AND NUTRITION
- SUSTAINABLE URBANIZATION (“SMART CITIES”)

**WILL NEED TECHNOLOGICAL BREAKTHROUGHS**

# The Food Crisis

Sustaining growth is the century's big challenge

By Martin Wolf

Financial Times Comment, *June 11, 2008*

## Response to Martin Wolf by Jeffrey Sachs

*"The market system fails to solve four fundamental classes of problems: ecosystem functions (the bio-geophysical commons); population; extreme poverty (because of the very real dynamics of poverty traps); and technological pathways needed for sustainability. These are solvable problems. They require collective action, as they are fundamentally in the character of public goods. Yet for the same reason they are not solved. Part of the barrier is the ideology of market economics itself, which often denies these problems and therefore is short on producing practical tools and solutions."*

Jeffrey D. Sachs

http://www.sachs.earth.columbia.edu/commonwealth/jeffarticles.php

*„Are the vitally needed sustainable technologies within reach? Probably at modest cost. Many are already on the horizon, a „future that is already present.“ Are we making such investments? Plainly no.”*

*„We have yet to master the full „value chain“ of research, development, demonstration, and diffusion (RDD&D) to mobilize sustainable technologies at anything close to the necessary global scale and speed.“*

Jeffrey D. Sachs

**Learn about the Food Crisis –**
**Sustaining growth is the century's big challenge**
Financial Times Comment, June 11, 2008
Response to Martin Wolf by Jeffrey Sachs

# Appendix 3

About Suppressed Demand

# Suppressed Demand

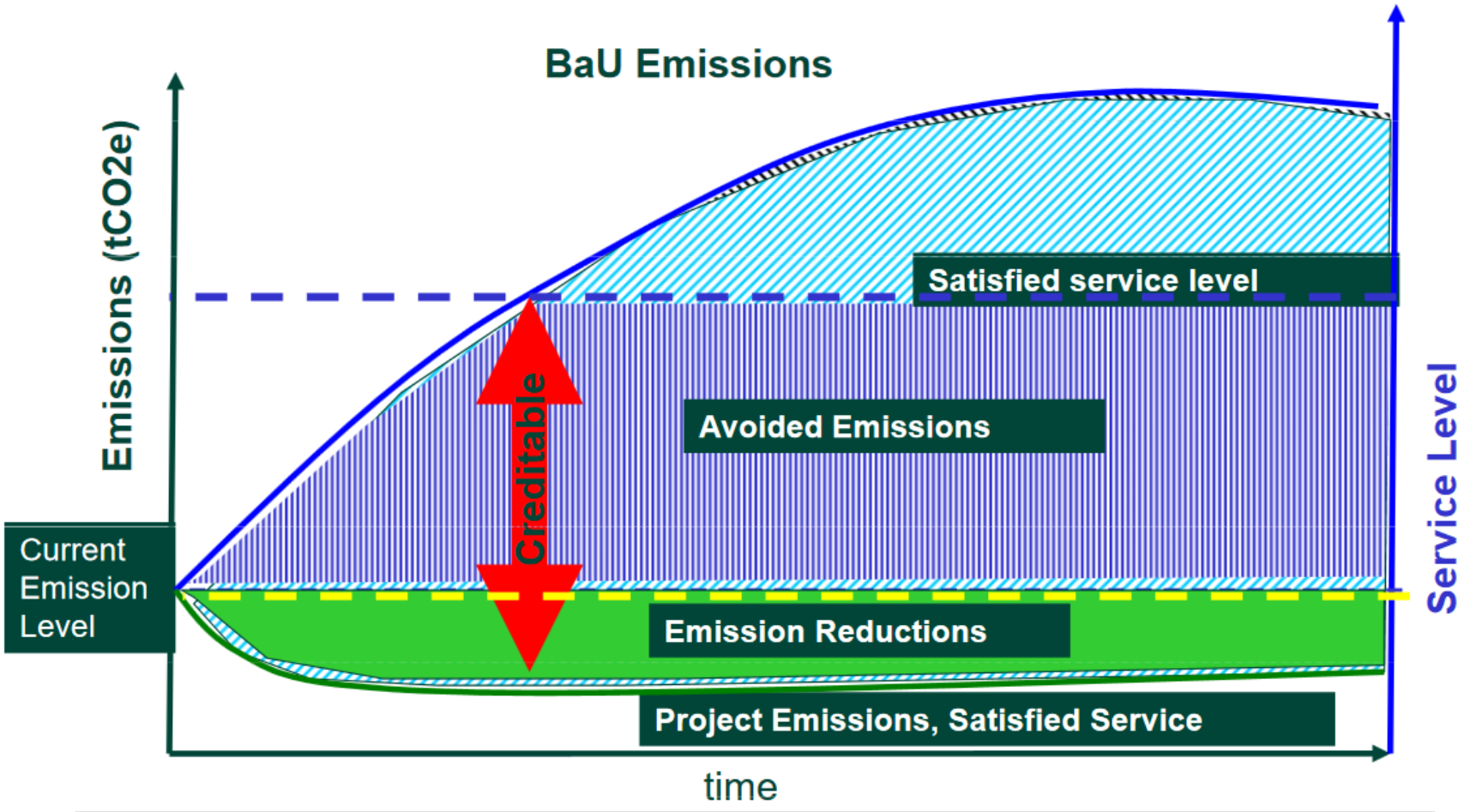
**Definitions**

- **"Suppressed demand"** is the situation where energy services provided are insufficient – due to poverty or lack of access to modern energy infrastructure – to meet the needs of stakeholders given their human development needs (CDM Gold Standard biogas digester meth).

- **"Satisfied Demand"** the level of energy services that would be reached with access to better quality and more affordable services, and that would be —adequate and —reasonable for, in this case, rural households to meet their basic needs. i.e. satisfied demand is when the income effect and energy cost effect are overcome. Therefore: Satisifed Demand = level of service suppressed by income effect + level of service suppressed by energy cost effect.

https://cdm.unfccc.int/methodologies/Workshops/cdm_standards/s3_wb.pdf

# Suppressed Demand as service levels suppressed by energy cost effect and income effect.




https://cdm.unfccc.int/methodologies/Workshops/cdm_standards/s3_wb.pdf

# Minimum service level to address Suppressed Demand

- "Minimum" service level is a proxy for satisfied demand established as a "minimum level of service" which would result in an adequate service to meet basic human needs.
- Minimum service levels exists for many types of technologies and services e.g. Millennium Development goals clean water, adequate comfort levels (e.g. Space heating and cooling), nutritional levels etc.
  - Define minimum standard level based on literature
  - Convert this to emissions by identifying baseline technology
  - This then eliminates the need to monitor baseline while providing reasonable, objective baseline
- Not appropriate for all sectors/technologies and still have to agree the level.

# Appendix 4

Examples
for income generation with SK14

and

Phases of Innovations

# Boiling water is a major task for the solar cooker

On a sunny day, with the parabolic solar cooker more than 40 liters of water can be boiled.

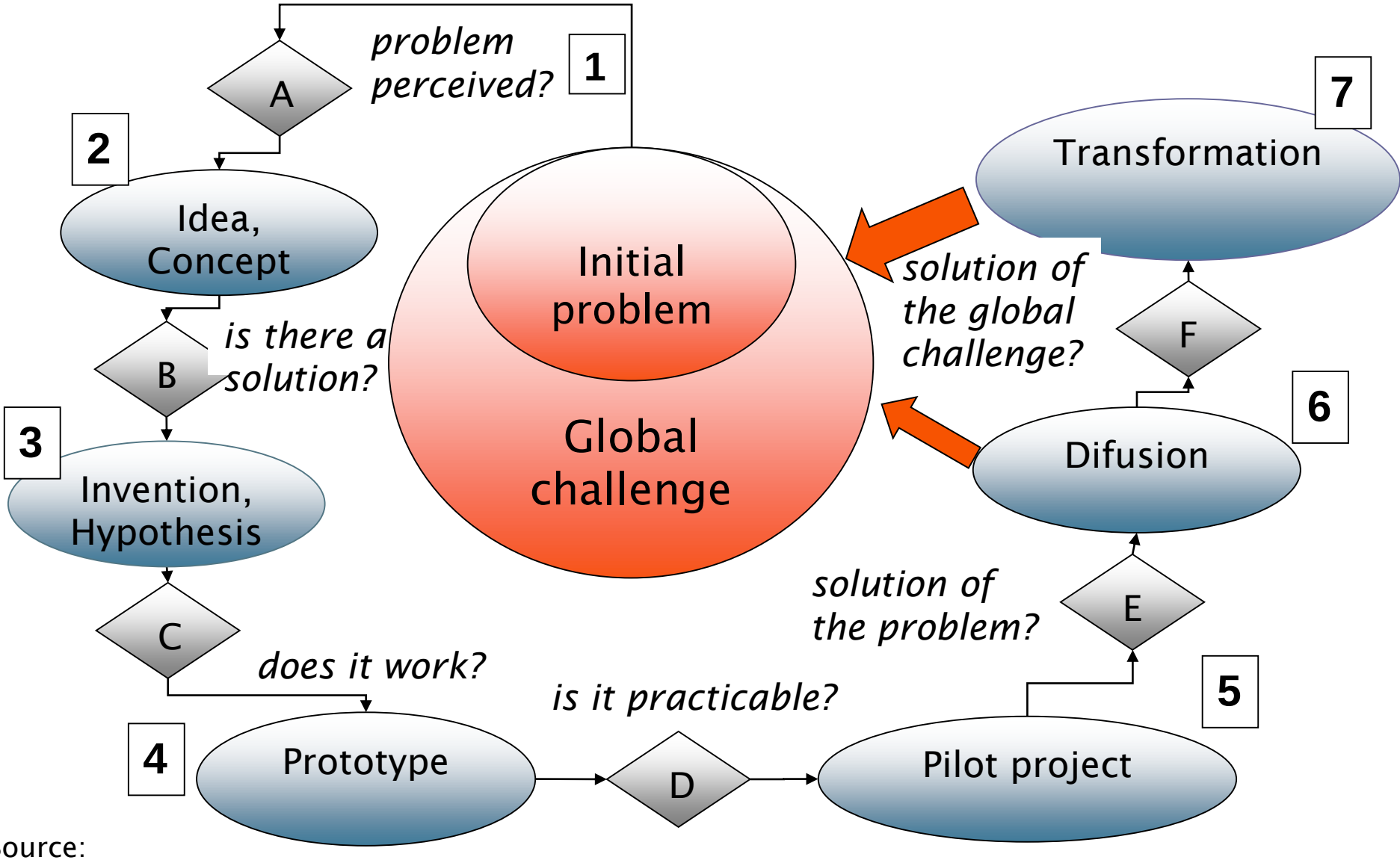
Second International Solar Cooker Test of the European Committee for Solar Cooking Research ECSCR: “boils 48 l of water a day”

Photo: Solar Cooking Course at ICNEER of Dr. Shirin und Deepak Gadhia, with Imma and Dr. Dieter Seifert, Valsad/Gujarat (2004)

# Income Generation with the Parabolic Solar Cooker

Examples of salable products prepared by Imma Seifert

# Phases of Innovation




Source:
D. Seifert: On the way to sustainability – Ideas about the exhibition "Ciencia y tecnología para el desarrollo", Coloquio Internacional, Parque de las Ciencias, Granada (2007)

# Appendix 5

Original cited German texts

# „Manchmal könnte ich schreien“

*„Uns Klimawissenschaftlern ist natürlich schon lange bewusst, dass die Fluchttür beim Klimawandel nur noch eine Handbreit offen steht. Bald könnte sich diese Tür ganz schließen – etwa durch die eben angesprochene Freisetzung der Methangase aus terrestrischen und marinen Quellen. Und wenn wir tatsächlich in diesem Jahrhundert eine globale Erwärmung von fünf, sechs Grad zustande bringen, dann wird es auf diesem Planeten eine Hochzivilisation, wie wir sie heute kennen, nicht mehr geben.“*

Hans Joachim Schellnhuber

Direktor des Potsdam-Instituts für Klimafolgenforschung

im Interview mit „DIE ZEIT“, 26. 3. 2009

http://www.sonnenseite.com/Interviews,Manchmal+koennte+ich+schreien,20,a12631.html

# „Informiert euch!“

von Luisa Neubauer, Gastbeitrag DIE ZEIT 9. Mai 2019

*„Wir setzen uns wissentlich, erst langsam, später ruckartig, den größten Katastrophen des Planeten aus und sorgen durch Nicht-Handeln dafür, dass die Disruptionen des ökologischen Kollapses unser Leben weit mehr einschränken werden, als das jegliche Umweltauflage vermag.“*

# Pressemitteilung des Umweltbundesamtes vom 20.11.2018:

*„Hohe Kosten durch unterlassenen Umweltschutz“*

*„Eine Tonne $CO_2$ verursacht Schäden von 180 Euro – Umweltbundesamt legt aktualisierte Kostensätze vor“*

https://www.umweltbundesamt.de/presse/pressemitteilungen/hohe-kosten-durch-unterlassenen-umweltschutz

# Kompensation u.a. von Flugreise-Emissionen: Beispiel INTERSOL

*“Mit der Überweisung des vorgeschlagenen Betrags fördern Sie den Einsatz von Solartechnologie und den Biolandbau unserer Südpartner”*

# Backyard Gardening
## Nachhaltige Ertragssteigerung durch Bodenverbesserung

Agric Society Switzerland Ghana - ASSG

https://assg.info/125/projekte/ertragssteigerung-backyard-gardening

ASSG ist bestrebt den Nutzen des eingesetzten Spendengeldes nach Möglichkeit immer weiter zu steigern. So hat ASSG erkannt, dass durch die Unterstützung der Bauern im Ackerbau pro Jahr nur eine einzige Ernte möglich ist. Dies weil die Regenzeit mit 5 Monaten in etwa einer Pflanzsaison entspricht. In den übrigen 7 Monaten des Jahres herrscht Trockenzeit in Nordghana, so dass ein Ackerbau nicht möglich ist.

Ganz anders präsentiert sich die Situation in den Dörfern hinter den Wohnhäusern. Im Dorf besteht zumeist eine rudimentäre Wasserversorgung mittels Brunnen oder mittels Dachwassernutzung. Damit ist das ganze Jahr hindurch eine bescheidene Menge an Wasser verfügbar für Hinterhof-Anpflanzungen (Backyard Gardening). Je nach Pflanzensorte benötigt man zwischen einigen Wochen und 4 Monaten Zeit zwischen Ansäen und Ernte. Das heisst, es sind im Minimum 3 Ernten pro Jahr möglich.