

WAPRO PHASE II (2018 – 2022) FINAL REPORT



Date of publication	March 2023
Editor	Peter Schmidt, Jens Soth, Luisa Quarta Kubioka
Contact	Peter.schmidt@helvetas.org
Update of version	-

1 Table of Contents

1.	Basic Information	5
2.	Overview	6
2.1.	Main results achieved and implementation performance of the project.....	6
2.2.	Project brief.....	7
3.	Achievements in relation to the outcome indicators	7
3.1.	Number of farmers involved (Impact indicator 1)	7
3.2.	Achieved income increases (impact indicator 2)	9
3.3.	Water productivity increases (Impact indicator 3)	10
3.4.	Adoption Rate (indicator 4).....	12
3.5.	Crop yields (outcome indicator 5).....	18
3.6.	Crop Value (outcome indicator 6).....	20
3.7.	Achievements for local policy discussions (Indicator 7).....	22
3.8.	Achievements for water stewardship activities in each sub-project (Indicator 8).....	24
3.9.	Crowding in of further actors (Indicator 9)	26
4.	Critical assessment of outcome achievements.....	27
4.1.	Results of the external evaluation	27
4.2.	Assessment of achieved outcomes	28
4.3.	Unintended effects of the intervention	29
5.	Output performance according to the Logframe.....	30
5.1.	Accomplishments in relation to the planned logframe outputs	30
5.2.	Islamic Development Banks and the Regional Rice Value Chain Project	31
5.3.	Major differences between executed and planned activities.....	34
5.4.	Outreach	34
6.	Finances and Management.....	36
6.1.	Percentage of budget spent vs planned per outcome	37
6.2.	Comments on budget deviations and over- respectively underspending	37
6.3.	Partner contributions.....	38
7.	Lessons learned.....	40
7.1.	PUSH.....	40
7.2.	PULL.....	40
7.3.	POLICY	41
7.4.	OUTREACH	42
8.	Annexes.....	42

List of Figures and Tables

Figure 1: Results of the external evaluation of WAPRO conducted by KEK Consultants in 2022	27
Figure 2: Overview of the structure for the M&E self-learning video clips (English version).....	33
Table 1: Number of farmers based on monitoring data and adoption rate survey	8
Table 2: Farmers age groups based on adoption rate survey.....	9
Table 3: Income Increases as in percent, per ha and per farmer from 2021/ 2022 from the Monitoring Report and annual reports.....	10
Table 4: Summarised results for the Water use efficiency of all WAPRO seasons.....	11
Table 5: Summarized results of Adoption Rate Survey from 2022.....	12
Table 6: Overview of benefits generated in four project years for all WAPRO cotton sub-projects.....	15
Table 7: Overview of benefits generated in four project years for all WAPRO rice sub-projects	16
Table 8: Summary of the monetary benefits of all WAPRO sub-projects per season and final cost-benefit calculation	17
Table 9: Summary of results for the indicator “yield increase” for all WAPRO sub-projects (Kyrgyzstan was not monitored due to the focus on the policy component).....	19
Table 10: Summarizing results for all sub-projects for the indicator 6: Crop value	21
Table 11: Logframe outcome and impact indicators compared to target achievements.	30
Table 12: Capitalization of experiences respectively special closing events at the end of the project.....	34
Table 13: Most important events where WAPRO contributed in 2022.....	35
Table 14: WAPRO's insights and acquired knowledge were published through various channels.	36
Table 15: Overview of budget versus expenses for WAPRO Phase II ((1.11.2018 – 31.12.2022, CHF).....	37
Table 15: Overview of budget versus expenses for WAPRO Phase II ((1.11.2018 – 31.12.2022, CHF).....	37
Table 16: Partner contributions to WAPRO and comparison to budget; in CHF; USD converted to CHF: 1 USD = 0.92 CHF)	38
Table 16: Partner contributions to WAPRO and comparison to budget; in CHF; USD converted to CHF: 1 USD = 0.92 CHF)	38

Abbreviations

ALRI	National Agency of Land Reclamation and Irrigation (Tajik Authority for Irrigation)
AWD	Alternate wetting and drying
AWS	Alliance for Water Stewardship
BCI	Better Cotton Initiative
CSPC	Coastal Salinity Prevention Cell – the implementing CSO for the sub-project India BCI Cotton
DRAE	Direction Régionale de Agriculture – Local agricultural government authority that has also is the governing authority for irrigation in of Madagascar
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ISDB	Islamic Development Bank
NRMU	Reismühle Nutrex, a division of Coop Switzerland
RPL	Rice Partners Limited - the implementing rice mill for the PUSH and PULL of the sub-project Pakistan SRP rice
RRVC	Regional Rice Value chain Project (with the Islamic Development Bank)
SRI	Systems of rice intensification
WAPRO	WATER PRODUCTIVITY – the acronym for the entire project
WUA	Water User Association

1. Basic Information

Project Details		
Name of Project	Increased water efficiency in rice and cotton production through multi-stakeholder partnerships applying a push-pull-policy strategy – Short title WAPRO	
Project Phase II	November 2018 – December 2022	
Budgeted contributions per donor	SDC	5.1 million CHF
	Partners	12.8 million CHF
Overall implementation cost according to actual spending	From SDC contributions:	4.5 million CHF
	Partner contributions	17.5 million CHF
Implementing countries	Tajikistan, Kyrgyzstan, India, Pakistan, Madagascar, Myanmar	
Project area, main location	Pakistan: Punjab / India: Gujarat, Haryana, Uttarakhand, Uttar Pradesh, Madhya Pradesh / Myanmar: Mon State, Shan State, Bago Region, Sagain Region / Madagascar: Toleara / Tajikistan: Sughd / Kyrgyzstan: Jalalabad	
Primary Target Group(s) and System Partners	Farmer families in implementing countries.	
Short description of project, primary stakeholders and project logic	<p>The Water productivity (WAPRO) project addresses water productivity based on a PUSH, PULL, POLICY approach (see below). In its first phase, WAPRO was initiated as a multi-stakeholder initiative with six sub-projects in India, Pakistan, Kyrgyzstan, and Tajikistan. The project focused on rice and cotton, both key commodities that are responsible for and affected by water scarcity. In the second phase, WAPRO expanded from six to ten sub-projects and included two more countries: Madagascar and Myanmar. Furthermore, the project shifted its focus from the key commodities away to a more diversified production and marketing system. As in the first phase, the consortium partners implemented the sub-projects and activities based on a co-financing model. Together with the SDC contributions the overall project budget for the second 4-year phase (2018 – 2022) amounted to rounded 17.8 million Swiss Francs. Owing to the pandemic impact the project was extended from originally 2021 to 2022.</p>	
Impact (development, objective, overall goal)	The overall project objective is to “enhance food security, farmers’ income and water productivity for 65’000 farmer families in Pakistan, India, Tajikistan, Kyrgyzstan, Myanmar and Madagascar”.	
Consortium and implementing partners	<p>Consortium partners: Coop, Sustainable Rice Platform SRP, Better Cotton Initiative, Mars, BioRe, Bionex, Reismühle Nutrex, Alliance for Water Stewardship, Norad, LT Foods Ltd, Jain Irrigation Inc., Westmill, SCRIMAD, Prime</p> <p>Implementing Partners: Lt Food, Partners in Prosperity, Jain, Mars, Westmill, Rice Partners Pvt. Ltd, Galaxy, BioRe, Coastal Salinity Prevention Cell, PrimeAgri, Cesvi</p>	
Project Set-up	Multi-stakeholder project under the guidance of Helvetas. Consortium partners jointly implement, guide and finance the sub-projects.	

2. Overview

This chapter gives a project brief and illustrates an overview of the main results WAPRO achieved and the implementation performance of the project. Besides its achievements this chapter also addresses main challenges.

2.1. Main results achieved and implementation performance of the project
“[WAPRO](#)” was an eight-year (2015 – 2022) project aimed at enhancing water productivity in the cultivation of rice and cotton, two of the most water-consuming crops globally. It was a joint undertaking of SDC, with renowned private sector partners such as Mars and Coop, global platforms such as the Better Cotton Initiative, the Sustainable Rice Platform and the Alliance for Water Stewardship, and numerous local private and civil society partners. In its second phase the project consisted of ten sub-projects active in six countries: India, Kyrgyzstan, Madagascar, Myanmar, Pakistan, and Tajikistan. Helvetas was mandated to coordinate project implementation through a “Push-Pull-Policy” approach. In its “Push component”, it worked with more than 100’000 farmers to help them adopt water saving technologies. Through its “Pull component”, global as well as smaller domestic companies are now sourcing rice and cotton more sustainably, encouraging the supplying farmers by providing them with a market. With its “Policy component”, the project contributed to shaping global production standards, influenced national and sub-national policies to allocate scarce irrigation water fairly, and empowered thousands of farmers to claim their right to access to irrigation water via local water stewardship actions.

Owing to the pandemic impact the project was extended from originally 2021 to 2022.

The key results of Phase II of the project are:

- More than 110’000 farming households reached (target 65’000) with a share of ca 11% female farmers (target 15%) as per an adoption rate survey conducted in 2022.
- Increase of the water-efficiency of 39% (mean all sub-projects, target 30%).
- Increase of productivity per area of 16.5% (mean all sub projects) with a range from 5.8% (sub-project India SRP rice) to 30.7% (sub-project Myanmar SRP rice).
- Average net income increase of USD 121 per hectare and year in 2022 (target 50 CHF / hectare).
- The financial volume of products purchased by WAPRO’s commercial partners amounted to 183 Mio USD (target: 120 Mio USD). More importantly: Stable business relationships between the producers that comply with more ecological and more water efficient production methodologies and market actors have been established and will sustain beyond the end of the WAPRO project.
- Documented methane emission reduction in rice production following the Alternate Wetting and Drying methodology in Myanmar of up to 44%.
- Documented policy changes thanks to project interventions leading for example to amendments to the Kyrgyz Water Code to improve local irrigation management and the production standard of the Better Cotton Initiative with currently 2’400 members globally.
- Successful collaboration among multiple partners for example confirmed by contributions by private sector partners almost quadrupling the contributions of SDC and exceeding the originally agreed amount by 38%.
- Capitalization of experiences in five distinct Topic Sheets covering 1) Water productivity, 2) Private Sector Engagement, 3) Collaboration with Multi Stakeholder initiatives, 4) Water

Stewardship and 5) Participatory Advocacy. The content of the topic sheets has been widely shared in public events on global level and in Switzerland and in various publications (e.g. in Rural21).

In 2022 the WAPRO was externally evaluated and particularly lauded for its relevance and coherence. In the oral debriefing to the project partners the evaluator named WAPRO as the project “with the highest probability for impact and sustainability in a complex context” that he had ever encountered in his career.

2.2. Project brief

The Water productivity (WAPRO) project addresses water productivity based on a Push-Pull-Policy approach. WAPRO was designed as a multi-stakeholder public-private participation initiative. In its first phase (2015 to 2018) the project focused on rice and cotton, both key commodities that are responsible for and affected by water scarcity. In the second phase (November 2018 to December 2022), WAPRO expanded from six to ten sub-projects and included two more countries: Madagascar and Myanmar beside India, Pakistan, Kyrgyzstan, and Tajikistan. In addition, through a collaboration with the Islamic Development Bank, it fostered South-South exchange from Asia to Africa, covering ten selected sub-Saharan member countries of the bank. Furthermore, the project shifted its focus from key commodities to a more diversified production and marketing system. As in the first phase, the consortium partners implemented the sub-projects and activities based on a co-financing model. The project strived to unfold synergies between Governments, development NGOs and the private sector companies to realize an innovative combination of improved irrigation water efficiency and food security.

The report at hand covers the operations of the project “Increased water efficiency in rice and cotton production through multi-stakeholder partnerships applying a Push-Pull-Policy strategy” during the period January to June 2022 plus the entire Phase II from 1.11.2018 to 31.12.2022.

The report is composed of the following two elements: A summary of the most relevant progress per project component and the updates as compared to the Yearly Plan of Operations (YPO) and/or narrative reports from the sub-projects as an extensive Annex document.

3. Achievements in relation to the outcome indicators

This chapter outlines the main achievements reached for all three impact indicators and six outcome indicators specified within the Logframe from Phase II.

3.1. Number of farmers involved (Impact indicator 1)

Overall, the number of farmers involved in all subprojects amounts to 110'941 farmers (the previously existing project of Pakistan BCI cotton not included), thereof 101'373 male farmers and 9'568 female farmers. Thus, the target of 65'000 farmers participating in capacity building on Push-Pull-Policy was exceeded significantly.

3.1.1. Gender and Age

In 2022 the project conducted a special “Adoption Rate Survey” to substantiate and complement the project’s ordinary monitoring as originally agreed with SDC. *Table 1* indicates the number of male and female producers involved in the project as farmers in their own rights. The percentage of female farmers involved is **10,9 %** for the Adoption Rate survey resp. **8,6%** according to the data from the project monitoring. Therefore, the overall target of reaching 15% female farmers was not reached. Nonetheless, the subprojects namely Madagascar, Myanmar, Tajikistan, India Organic Rice and India Organic Cotton have exceeded the target of 15% (as per monitoring data). Hereby the social context of a region should be taken into consideration, as different social customs can impact the access to land and titles heavily. For instance, for subprojects in Pakistan women seldomly own land titles and consequently cannot farm in their own rights.

It should be noted that the numbers from the Adoption Rate Survey are particular data samples from each subproject. Meanwhile, the percentage from the monitoring report represent the total numbers of male and female farmers involved in the project. For both, we present the average as a weighted mean since each data sample resp. the numbers of farmers involved in each subproject vary strongly (see *Table 1*). However, the overall percentage of female farmers involved corresponds with the weighted mean from the monitoring survey with 9,35%, while the mean value of the percentages from all subprojects amounts to 25% for female farmers.

Table 1: Number of farmers based on monitoring data and adoption rate survey

Subproject	Monitoring data				Adoption rate	
	Number of farmers		Number of farmers reached in %		Number of farmers reached in %	
	male	female	male	female	male	female
India Organic Rice	2'480	6'104	28,89	71,11	63,02	36,98
India SRP Rice	952	0	100,00	0	100	0
Madagascar	707	199	78,04	21,96	73,28	26,72
Myanmar SRP Rice	4'357	864	83,45	16,55	81,13	18,87
Tajikistan	1'919	1'281	59,97	40,03	60,33	39,67
Pakistan BCI cotton* ¹	< 64914 >	< 86 >	99,87	0,13	92,92	7,08
Pakistan SRP Rice* ²	77'765	235	99,70	0,30	99,66	0,17
India Organic Cotton	115	885	11,5	88,5	96,09	3,91
India BCI Cotton	13'078	0	100	0	100	0
Total (weighted mean in %)	101'373	9'568	91,38	8,62	89,05	10,92
Total number of farmers (excl. Pakistan BCI Cotton)	110'941					
Total number of farmers (incl Pakistan BCI Cotton)	< 175'855 >					

*¹Note: The farmers of the sub-project Pakistan BCI cotton were not calculated into the overall farmer numbers, because the project existed before WAPRO. Thus, the outreach to these farmers is not the full result of the WAPRO activities, but a result of the previous activities of BCI Pakistan

*² Note: Within the Adoption Rate Survey Pakistan SRP Rice indicated 0.17% as a *diverse* or non-binary gender, which is not included in this table, as it only occurred for one respondent.

Table 2 indicates the age groups of the farmers involved in the project. The majority of farmers involved are above the age of 35 years with a percentage of 88%. The age group from 11 to 35 years is merely 11% while farmers below 18 years are less than 1%. Considering that farms resp. land titles are often handed down from parents to their offsprings after they reached a certain age, these numbers are intelligible. Moreover, finding young people who want to work in agriculture is increasingly difficult.

Table 2: Farmers age groups based on adoption rate survey

Subproject	Farmers age group in %		
	below 18 years	18 to 35 years	above 35 years
India Organic Rice	0,90	0,45	98,65
India SRP Rice	0,00	0,89	99,11
Madagascar	0,38	42,97	56,65
Myanmar SRP Rice	0,00	2,53	97,47
Tajikistan	0,00	23,67	76,33
Pakistan BCI cotton	0,00	28,75	71,25
Pakistan SRP Rice	0,17	6,20	93,63
India Organic Cotton	0,00	11,45	88,55
India BCI Cotton	0,00	5,78	94,22
Total weighted mean in %	0,15	11,03	88,82

3.2. Achieved income increases (impact indicator 2)

Table 3 illustrates the achieved income increases based on the monitoring data first as percentage, second per hectare, and third per farmers. The calculations are based on the difference between a) the yields of farmers participating in WAPRO compared to conventional farmers and b) the average sales price of crop under improved conditions for WAPRO farmers and the average sales price of crop for the control group. However, for the two subprojects namely *Madagascar Various Rotations* as well as *Pakistan BCI Cotton*, the prices do not differ. Pakistan BCI Cotton farmers merchandize their products to the same buyer as the control group and Artemisia / dry peas farmers in Madagascar all merchandize their produce to SCRIMAD and Bionexx. Hence, there are no price differences for these two subprojects. Therefore, the income increases for both subprojects are determined by the productivity increase based on the annual reports.

The target for this indicator was at least 50 CHF / hectare increased income for 45'000 farmers (70% of total farmers). Six out of nine subprojects achieved an income increase above 50 CHF/ hectare. Regarding the number of farmers, around 74'910 farmers have an average income increase of over 50 CHF/ hectare. Kyrgyzstan is not included here, as this subproject was solely focused on the policy component.

Table 3: Income Increases as in percent, per ha and per farmer from 2021/ 2022 from the Monitoring Report and annual reports.

Subprojects	Season	Income increase (\$/t) %	Income increase per ha \$	Income increase per farmer \$
India SRP Rice	Season 2021/ 2022	3,0	56,2	410,2
India Organic Rice	Season 2021/ 2022	50,0	456,9	421,1
India BCI Cotton	Season 2021/ 2022	1,5	20,3	33,5
India Organic Cotton	Season 2021/ 2022	10,2	63,6	63,6
Madagascar Various Rotations	Season 2021/ 2022	57,2	203,5	28,1
Myanmar SRP Rice	Season 2021/ 2022	2,3	3,7	14,2
Pakistan SRP Rice	Season 2021/ 2022	6,9	49,3	1042,9
Pakistan BCI Cotton	Season 2021/ 2022	26,3	116,9	302,9
Tajikistan Cotton	Season 2021/ 2022	5,2	133,8	225,1
Weighted average	Season 2021/ 2022	23,5	121,0	285,6

3.3. Water productivity increases (Impact indicator 3)

For the increase of the water use efficiency the target set for phase II was 30% in comparison to the non-project peer farmers.

The following *Table 4* summarizes the main results of the monitoring. For some sub-projects additionally several technologies were compared as the relevance of the differentiation for any further continuation is high.

Table 4: Summarised results for the Water use efficiency of all WAPRO seasons

Sub-project	Technology	Parameter	Unit	Season				Mean of sub-project
				2018/2019	2019/2020	2020/2021	2021/2022	
Tajikistan Cotton	Short furrow	Water use efficiency	(m3/kg)	1.23	1.1	1.27	1.44	
	Long furrow	Percentage below comparison group	%	37.0%	69.0%	78.7%	59.7%	61.1%
Kyrgyzstan Cotton	Short furrow	Water use efficiency	(m3/kg)		1.8			
	Long furrow	Percentage below comparison group	%		34.0%			34.0%
India organic Cotton	arboreum & organic	Water use efficiency	(m3/kg)	19	8.95	4.45	1.02	
	conventional	Percentage below comparison group	%	24.0%	5.0%	22.5%	23.3%	18.7%
India BCI Cotton	BCI & alternate furrow	Water use efficiency	(m3/kg)	no data	no data	0.45	0.43	
	Conventional	Percentage below comparison group	%	no data	no data	58.3%	60.2%	59.3%
Pakistan BCI Cotton	BCI & alternate furrow	Water use efficiency	(m3/kg)	no data	no data	1.46	1.37	
	Conventional	Percentage below comparison group	%	no data	no data	21.1%	27.1%	24.1%
India Organic Rice	SRI	Water use efficiency	(m3/kg)	no data	0.88	0.72	0.73	
	cont. Flooding	Percentage below comparison group	%	no data	65.0%	47.1%	45.1%	52.4%
	AWD	Water use efficiency	(m3/kg)	no data	1.23	0.87	0.86	
	cont. Flooding	Percentage below comparison group	%	no data	52.0%	36.0%	35.3%	41.1%
India SRP Rice	SRP & AWD	Water use efficiency	(m3/kg)	no data	1.67	1.692	1.47	
	continous flooding	Percentage below comparison group	%	no data	31.0%	30.5%	29.7%	30.4%
	SRP & drip	Water use efficiency	(m3/kg)	1.43	0.475	1.25	0.77	
	continous flooding	Percentage below comparison group	%	0	79.0%	20.4%	52.5%	38.0%
Myanmar SRP Rice	SRP & AWD	Water use efficiency	(m3/kg)	no data	no data	0.28	0.277	
	continous flooding	Percentage below comparison group	%	no data	no data	72.3%	53.1%	62.7%
Madagascar Rice	AWD	Water use efficiency	(m3/kg)	no data	6.68	8.42	6.19	
	continous flooding	Percentage below comparison group	%	no data	49.0%	39.3%	23.8%	37.4%
Pakistan SRP Rice	Laser Level	Water use efficiency	(m3/kg)	4.8	4.1	4.3	4.3	
	cont. Flooding	Percentage below comparison group	%	23.0%	23.0%	18.9%	18.9%	20.9%
	Laser Level & AWD	Water use efficiency	(m3/kg)	4.26	4	4.1	4.1	
	cont. Flooding	Percentage below comparison group	%	13.0%	25.0%	22.6%	22.6%	20.8%
Mean % of all cotton sub-projects	40.80%							
Mean % of all rice sub-projects	38.00%							
Mean % of all WAPRO sub-projects	38.90%							
Target for phase II	30%							
Target fulfillment phase II	129.6%							

Kyrgyzstan data are excluded as there was a focus on the Policy component.

Colour code: Green: target achieved, yellow: significant increase of water use efficiency but target not fully achieved, red: low increase of water use efficiency.

The targeted water savings for phase II were more than achieved. The majority of the sub-projects managed to have more than 30% water use efficiency as compared to non-project farmers.

Kyrgyzstan, which is not shown in the table, because there was a focus on the Policy component in phase II managed to achieve a 34% increase of water use efficiency, when a control monitoring was conducted in the season 2019/2020.

3.4. Adoption Rate (indicator 4)

This chapter discusses the results of the Adoption Rate Survey, which was conducted in 2022. All subprojects participated in the survey with the exception of Kyrgyzstan due to the policy focus. Subsequently, the results of the adoption rate were incorporated into the cost – benefit analysis.

3.4.1. Adoption Rate Survey

The overarching objective of the Adoption Rate Survey was to evaluate how many farmers have adopted the technologies promoted by activities within the PUSH component. A total of 3'906 project farmers and 1'079 non – project farmers have participated in the survey conducted between April, 15 and June, 28, 2022. Non-project farmers were defined as farmers, who did not visit any WAPRO-related trainings in the last three growing seasons.

Besides questions regarding the adoption of technologies, the questionnaire also included demographic data about the sampled respondents. The results of the complete survey are available in a stand-alone document.

The target of a 70% adoption rate was well reached by an adoption rate of 87,07% for the whole sample and an average adoption rate of 88,23% as mean for all subprojects in question. In comparison, the non – project farmers achieved an adoption rate of 49,68% for the complete sample size and an average adoption rate of 59,36% as mean percentage of the sub-projects.

This shows that the WAPRO technologies are attractive to all farmers and that WAPRO had a significant impact also on non-project farmers.

Table 5: Summarized results of Adoption Rate Survey from 2022.

Subproject	No technologies applied	At least one technology applied	Total	Farmers adopting a technology in %
India BCI Cotton	308	799	1107	72,18
India Organic Cotton	0	358	358	100,00
Madagascar	58	205	263	77,95
Myanmar	53	106	159	66,67
Pakistan BCI Cotton	27	264	291	90,72
Pakistan SRP Rice	0	597	597	100,00
Tajikistan	429	2771	3200	86,59
India Organic Rice	0	457	457	100,00
India SRP Rice	0	337	337	100,00
Total	875	5894	6769	87,07%
Average				88,23%

3.4.2. Cost – benefit analysis

The project had a guidance by SDC to look for a streamlined cost-benefit analysis with the income increase per farmer as key figure. Based on the WAPRO phase I experiences the actual targeted income increases were carefully set to 50 CHF /hectare per year.

This would generate for four project years and a target of 65'000 farmers a benefit of 13 million CHF. The following *Table 6* compiles the actual figures per project season for all the cotton sub-projects and the *Table 7* compiles the same figures for the rice projects.

The following comments and explanations shall help to understand the methodical limitations of the analysis.

Overall method:

The data for the income increase per hectare and the number of farmers stem from the WAPRO monitoring system. For the “ideal” WAPRO farmer the additional benefit stems from increased yield and a higher price as compared to their non-project peers.

Exclusions from the calculation:

In the start year of WAPRO phase II 2018/2019 the sub-projects that joined WAPRO newly were establishing demo plots or partnerships with lead farmers to achieve the subsequent outreach. In these years there were already benefits for these demo or lead farmers, but since the monitoring system was under piloting, too, there were no consistent monitoring data yet. This is the reason, why some projects show empty cells for particularly the first season.

The sub-project Kyrgyzstan cotton was focusing on the policy and did not pursue a systematic farmer outreach anymore. Albeit in season 2018/2019 the team conducted a monitoring to check whether farmers still use the technologies trained in WAPRO phase I. Thus, the resulting value is given in the table to have at least some indications. The sub-project was nevertheless fully excluded from the total benefit calculation to be consistent.

The sub-project BCI cotton Pakistan was likewise excluded from the calculation because the outreach to farmers stems fully from BCI Pakistan work before (or without) WAPRO. Given its large amount of farmers the entire planning calculation and benefit forecast would have looked different if this sub-project was to be fully factored in. Therefore, the benefits are not calculated into the total benefit amount to allow a reasonable assessment. The table gives a value for this sub-project for season 2021/2022, though to also have an indication of the value generated in this sub-project.

The sub-project Madagascar calculated only the additional benefits of the rice crop because only this allows a detailed comparison with non-project farmers. All farmers that grew Artemisia or Lima beans (Pois du Cap) are WAPRO farmers and all apply the trained technologies. So, there are no comparison values for this. Thus, the entire benefit of these diversification crops is NOT included into the calculation either. Their value would make the total benefit of this very sub-project significantly higher.

Also, the costs of the project include the costs for the season 2022/2023 that was not finished at the time of the final editing of this report, but it does not show the benefits. This is another factor why the total cost-benefit assessment is on the careful side and the actual figure of benefits is rather higher than lower.

Table 6: Overview of benefits generated in four project years for all WAPRO cotton sub-projects

Sub-project	Unit	Tajikistan Cotton	Kyrgyzstan Cotton	India BCI Cotton	India organic cotton	Pakistan BCI Cotton
Parameter		Income increase over comparison				
WAPRO technology		short furrow	short	BCI package	arboreum variety, organic	BCI practices
Conventional technology		long furrow	long furrow	conventional methods	conventional production	conventional
Surface of WAPRO farmers 2018/2019	ha	5'899	no outreach, only Policy	start year	550	start year
Income increase	S / ha	799			87.255	
Benefit 2018/2019	\$ * acreage * adoption rate	2'733'715			47'990	
Surface of WAPRO farmers 2019/2020	ha	6'151	450		1'000	
Income increase	S / ha	294.93	384.67		108.00	
Benefit 2019/2020	\$ * acreage * adoption rate	1'814'130	<124'632>	not calculated	77'760	not calculated
Surface of WAPRO farmers 2020/2021	ha	7'303		11'512	2'000	239'114
Income increase	S / ha	114.04		40.00	45.75	
Benefit 2020/2021	\$ * acreage * adoption rate	832'834		460'480	91'500	n.n.
Surface of WAPRO farmers 2021/2022	ha	5'381		12'265	1'000	168'441
Income increase 2021/2022	S / ha	133.84		20.26	63.60	367.20
Benefit 2021/2022	\$ * acreage * adoption rate	720'193		248'489	63'600	<12'370'307>
Benefit of sub-project 2018/2022	\$	6'100'872		708'969	280'850	<12'370'307>

Table 7: Overview of benefits generated in four project years for all WAPRO rice sub-projects

Sub-project	Unit	India Organic Rice	India SRP Rice	Myanmar SRP Rice	Madagascar	Pakistan SRP Rice
Parameter		Income increase over comparison				
WAPRO technology		AWD, organic	AWD	Direct sowing, AWD	AWD	Levelled & AWD
Conventional technology		cont flood, conventional	continuous flooding	Transplanting, flooded	continuous flooding	non-levelled, cont. flood
Surface of WAPRO farmers 2018/2019	ha	800	900	573.8	start year	10789
Income increase	S / ha	450	50	5		125.375
Benefit 2018/2019	\$ * acreage * adoption rate	360'000	45'000	2'869		311'114
Surface of WAPRO farmers 2019/2020	ha	816	11'701	1'477	1'500	14'437
Income increase	S / ha	141.36	136.00	141.9	198.75	213
Benefit 2019/2020	\$ * acreage * adoption rate	48'447	668'361	88'026	44'719	1'045'528
Surface of WAPRO farmers 2020/2021	ha	3'500	6'260	4'543	1'504	42'052
Income increase	S / ha	569.25	56.32	328.86		
Benefit 2020/2021	\$ * acreage * adoption rate	1'992'375	211'538	448'203	44'669	802'100
Surface of WAPRO farmers 2021/2022	ha	3'550	6'966	5'457	1'500	15'825
Income increase 2021/2022	S / ha	456.93	56.22	56.22	173	49.29
Benefit 2021/2022	\$ * acreage * adoption rate	973'261	234'977	306'793	103'500	257'405
Benefit of sub-project 2018/2022	\$	3'374'083	1'159'876	845'891	192'888	2'416'146

The following *Table 8* visualizes the total cost-benefit based on the benefits of the sub-projects as shown in *Table 6* and *Table 7*.

The cost figure refers to the contribution by SDC only and is a tentative figure as not all accounts for the final year 2022 were fully closed at the time of the editing of this report.

The costs of the further WAPRO component the collaboration with the Islamic Development Bank were not included in the management cost.

In factoring in the management costs, one has to bear in mind that the deliverables of the Helvetas WAPRO management went far beyond the sheer coordination and administration of the sub-projects. All results from the knowledge-management (particularly the topic sheets that summarize the condensed WAPRO experience for outside stakeholders) and external outreach (particularly the videos, but also presentation on various events) would have to be deducted to have a very exact net benefit figure. Albeit the calculation as such is on the safe side with rather understating than overstating the generated value.

Table 8: Summary of the monetary benefits of all WAPRO sub-projects per season and final cost-benefit calculation

TOTAL of all benefits 2018/2019	S	3'500'688
TOTAL of all benefits 2019/2020	S	3'786'970
TOTAL of all benefits 2020/2021	S	4'883'699
TOTAL of all benefits 2021/2022	S	2'908'217
TOTAL for all years (Gross benefit of all projects excluding management costs)	S	15'079'575
Target	\$	13'000'000
Target fulfilment (gross calculation)	%	116.00%
Costs 2018 - 2022 (without IsDB costs)	CHF	4'225'349
RoE		1.08
Costs 2018 - 2022	\$	4'563'377
Generated Net Benefit (including management costs)	\$	10'516'198

The WAPRO phase II project target for the overall benefit was 13 Million USD. This target was overachieved with 116% despite all the careful limitations as mentioned in the previous paragraphs.

This calculation is a limited view on the financial returns on farmers side. It does neither take into account any sustainability benefits with regard to saved water, improved technologies nor the long-term effect of established value chains certified according to international standards.

3.5. Crop yields (outcome indicator 5)

For the yield increases no actual quantitative targets were defined at the start of WAPRO phase II. Nevertheless, Table 9 visualizes the summarized resulting monitoring data related to yield increases. The percentage values have been given a simple colour code following the visualization idea of phase I:

The WAPRO farmers had a lower crop yield as the comparison farmers
The yield increase of WAPRO farmers is lower as 20% in rice and lower than 10% in cotton
The yield increase of WAPRO farmers is higher as 20% in rice and higher than 10% in cotton

The overarching idea for the differentiation between 10% in cotton and 20% in rice was the fact that due to long standing efforts of previous projects in cotton a lot of yield increase measures were already in place, so that the difference WAPRO could make for this particular indicator was regarded as limited.

Table 9: Summary of results for the indicator “yield increase” for all WAPRO sub-projects (Kyrgyzstan was not monitored due to the focus on the policy component)

Sub-project	Unit	Tajikistan Cotton	India BCI Cotton	India organic cotton	Pakistan BCI Cotton	India Organic Rice	India SRP Rice	Myanmar SRP Rice	Madagascar	Pakistan SRP Rice
Parameter		Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison	Income increase over comparison
WAPRO technology		short furrow	BCI package	arboreum variety, organic	BCI practices	AWD, organic	AWD	Direct sowing, AWD	AWD	Levelled & AWD
Conventional technology		long furrow	conventional methods	conventional production	conventional	cont flood, conventional	continuous flooding	Transplanting, flooded	continuous flooding	non-levelled, cont. flood
Productivity WAPRO 2018/2019	t/ha	4.3	no data as the crop was late and thus data not available at time of monitoring	1.112	Full project start incl monitoring with season 2020/2021	Starting year - identification of comparison group	3.4	Starting year, establishment of demo plots and identification of comparison farmers	Starting year, establishment of demo plots and identification of comparison farmers	3.515
Productivity comparison group	t/ha	2.6		1.007			3.3			3.22
Increase of productivity 2018/2019	t/ha	1.7		0.105			0.1			0.295
Increase of productivity	%	65.4%		10.4%			3.0%			9.2%
Productivity WAPRO 2019/2020	t/ha	3.1745	2.31	1.7	Full project start incl monitoring with season 2020/2021	1.62	3.79	2.82	4.29	3.9
Productivity comparison group	t/ha	2.7	2.12	1.8		1.31	3.63	2.27	3.54	3.3
Increase of productivity 2019/2020	t/ha	0.4745	0.19	-0.1		0.31	0.16	0.55	0.75	0.6
Increase of productivity	%	17.6%	9.0%	-5.6%		23.7%	4.4%	24.2%	21.2%	18.2%
Productivity WAPRO 2020/2021	t/ha	3.20	2.56	1.03	2.059	1.275	4.31	4.15	3.47	3.55
Productivity comparison group	t/ha	2.80	2.35	0.84	1.804	1.061	3.95	2.41	2.81	3.22
Increase of productivity 2020/2021	t/ha	0.40	0.21	0.19	0.26	0.21	0.36	1.74	0.66	0.33
Increase of productivity	%	14.3%	8.9%	22.8%	14.1%	20.2%	9.1%	72.2%	23.5%	10.2%
Productivity WAPRO 2021/2022	t/ha	3.40	2.87	0.98	1.73	2.09	5.67	4.84	3.16	3.55
Productivity comparison group	t/ha	2.75	2.35	0.96	1.37	1.72	5.31	3.83	2.01	3.20
Increase of productivity 2021/2022	t/ha	0.65	0.52	0.02	0.36	0.37	0.36	1.01	1.15	0.35
Increase of productivity	%	23.6%	22.1%	2.1%	26.3%	21.5%	6.8%	26.4%	57.2%	10.9%
Average productivity increase throughout all project years	mean of % of 4 seasons	30.2%	10.0%	7.4%	10.1%	16.3%	5.8%	30.7%	25.5%	12.1%
Average of all cotton projects	mean of % of cotton sub-projects	14.4%								
Average of all rice projects	mean of % of rice sub-projects	18.1%								
Average of all WAPRO sub-projects	mean of % of all sub-projects	16.5%								

Table 9 shows that the crop productivity of the entire WAPRO project in phase II could be increased by 16.5 % with a range from 5.8% (sub-project India SRP rice) to 30.7% (sub-project Myanmar SRP rice).

Not by surprise the sub-projects that were added for phase II had a better performance for this indicator, as particular Madagascar and Myanmar benefitted from the very low productivity levels that the farmers had in these very regions where hardly any extension reached farmers and where hardly any previous projects were active.

Only in one sub-project and there only in one season a lower yield of WAPRO farmers as their non-project peers was observed (sub-project organic cotton, India in season 2019/2020). In this sub-project organic standards are followed, which implies a ban of the application of synthetic fertilizers. The – only in this season – slightly lower yields were more than compensated by the prize premiums for compliance with organic and fairtrade standards.

This shows on one hand that the extension as well as the farmers had to fully get acquainted to the new production technologies but also that the “less bred” arboretum varieties in this very project may show a spread in yield performance. The underlying hypothesis supported by the observation of the extension workers is that these varieties have a higher resilience to extreme weather conditions. The choice of these varieties is thus a reasonable decision.

3.6. Crop Value (outcome indicator 6)

The overarching idea from the WAPRO project was to increase the farmer benefits with water savings, increased productivity and long-term stable value chains of sustainably produced products. The value of the products generated thereby is summarized in the following *Table 10*.

Some projects did not have a stable purchase partner (BCI cotton India, cotton Kyrgyzstan) or the partnership could only be crafted during the project. The cells in the table give the respective information as brief comment.

Since BCI cotton Pakistan existed as project before, the values of the cotton generated by this sub-project is indicated, but - aiming to have a fair assessment of the WAPRO achievements – not included into the target fulfillment calculation.

Furthermore, it has to be borne in mind, that the COVID extension year is excluded from the monitoring (and thus also from the target inclusion), because the final data were only available after the termination of the WAPRO project and the preparation of this report.

Table 10: Summarizing results for all sub-projects for the indicator 6: Crop value

Purchase (PULL) partner	Name	21 BCI accredited gineries	Reinhart AG, Winterthur (no project partner)	Occasionally BCI accredited gineries	Remei AG	BCI accredited gineries	Nature BioFoods	LT Foods	Local Rice Mills, who are project partners	Bionexx (for Artemisia)	SCRIMAD (for "pois du cap")	Galaxy (Westmill supplier) & Rice Partners Limited (Mars supplier)
Price for WAPRO farmers	\$/Mt	470.00	Monitoring data only for 2019/2020	No systematic purchase partner	831.00	Full project start from season 2020/2021	no data	no data	204.51	Starting year in which the purchase partnerships were crafted		425.00
Quantity sold	Mt	14'512			130		no data	no data	143			33'500
Value 2018/2019	\$	6'820'640			108'030		29'143	14'237'500				
Price for WAPRO farmers	\$/Mt	485.00	1850.00	673'400	828.00	456.00	544.75	258.00	318.00	689.00	352.50	
Quantity sold	Mt	3'000	364		560	2'376	24'975	820	143	195	33'000	
Value 2019/2020	\$	1'455'000	673'400		463'680	1'083'456	13'605'131	211'560	45'474	134'355	11'632'500	
Price for WAPRO farmers	\$/Mt	956.00	Monitoring data only for 2019/2020	720.80	1'152.00	910.00	471.23	523.56	218.84	300.00	650.00	422.50
Quantity sold	Mt	17'350		7'106	750	47'085	10'403	23'475	3'914	20	138	40'000
Value 2020/2021	\$	16'586'600		5'122'005	864'000	42'847'350	4'902'206	12'290'571	856'540	6'000	89'700	16'900'000
Price for WAPRO farmers	\$/Mt	783.00	673'400	1'150.00	1'142.00	1020.00	468.25	531.25	206.13	302.00	650.00	620.00
Quantity sold	Mt	18'466		14'614	600	258'054	10'392	25'000	4'302	113	139	39'000
Value 2021/2022	\$	14'458'721		16'806'100	685'200	263'215'080	4'866'054	13'281'250	886'771	34'023	90'519	24'180'000
Value 2018/2022	\$	39'320'961	673'400	21'928'105	2'120'910	306'062'430	10'851'716	39'176'952	1'984'014	85'497	314'574	66'950'000
TOTAL value all sub-projects including BCI Cotton Pakistan	\$	489'468'559										
TOTAL value all sub-projects excluding BCI Cotton Pakistan	\$	183'406'129										
Target	\$	120'000'000										
Target fulfilment (gross calculation)	%	152.84%										

The overall value of the products generated with improved WAPRO methods amounts to nearly 490 million dollars. But the major part is coming from the huge BCI cotton project in Pakistan. If the 306 million dollars generated by this project alone are deducted the remaining value for four project years comes to 183 million dollars.

The targeted 30 million dollars per year could be fully achieved.

3.7. Achievements for local policy discussions (Indicator 7)

This chapter outlines the achievements regarding the fostered policy discourse in each subproject. The indicator 7 was formulated as “*Water productivity and water stewardship processes taken up in local and higher-level policy discussions*” and revolves around the Outcome 3 “*Water use improvements in project regions are governed by multi-stakeholder water stewardship plans and reflected in either national or local policy frameworks.*” The indicator 7 specifically targets to at least address one policy constraining for water productivity by each project **or** to at least put one policy supporting water productivity effectively into action. Furthermore, it aims for relevant government institutions at the relevant level to be sensitized on water stewardship while supporting stewardship processes.

Subproject	Key achievements
India BCI Cotton	<ul style="list-style-type: none"> In coordination with the Policy Coordinator – India a comprehensive policy paper on the artificial recharge technology – Bore Blasting Techniques implemented in the project region by CSPC was elaborated. To strengthen the policy domain, the project worked on model villages for integrated water resource management to provide learning and knowledge sharing among farmers, stakeholders, and government officials and thus increase the visibility and replication of these models by conducting policy workshops at block, district, and state level.
India Organic Cotton	<ul style="list-style-type: none"> A study comparing water use between organic and conventional cotton systems was conducted. The data is fully compiled but is currently still being evaluated and analyzed. With the support of the National Coordinator, they aim at creating a policy brief with the data produced.
Pakistan BCI Cotton	<ul style="list-style-type: none"> Different governmental institutions like the Agriculture Extension Department, District Water Management Department, the Khaja Fareed University of Engineering and Information Technology (KFUEIT), the US-Pakistan Center of Advance Studies in Water (USPCASW) were not only sensitized but also joined hands for the promotion of water efficient technologies and management practices among farmers. The Punjab government has launched a solar tube well program to assist farmers and landowners in creating irrigation systems which increase crop yield. REEDS promoted water efficient irrigation systems by involving and signing Memorandum of Understanding (MoUs) with partners like the In-Service Agriculture Training Institute (ISATI), Khaja Fareed University of Engineering, Information Technology (KFUEIT), University of Agriculture Faisalabad Distt. Vehari Campus, Water Management Department, Agriculture Extension Departments (AED) of all the districts and Jaffer Agri Services Pvt-Limited.
Tajikistan	<ul style="list-style-type: none"> The project helped to identify and address problems hindering effective management of water resources and lack of legal documents. As a result, in the six districts covered by the project, a group of stakeholders led by the WAPRO Project developed proposals to review and supplement district development plans to incorporate water-saving technologies. The proposals were integrated into the Tajik Syr Darya River Basin Management Plan and submitted to decision-makers for approval in the form of the irrigation stakeholders’ feedback. These project proposals will contribute to the implementation of the socio-economic development goals of the country, reflected in the National Development Strategy of Tajikistan. The WAPRO Project developments were quoted and recommended for replication in documents related to the water sector, such as the feasibility studies for the reconstruction of the Khojabakirgan, Samgar or Aksu irrigation zones. The project team actively lobbied for project ideas and shared its experience during the panel discussions at regional conferences, roundtables and meetings, sharing its experience within the Central Asian region.
Kyrgyzstan	<ul style="list-style-type: none"> In December 2021, after three and a half years of systematic bottom-up advocacy led and owned by a Local Initiative Group, IWIP/WAPRO achieved its ultimate objective by getting the proposed legal reforms signed by the President of the Kyrgyz Republic. The package of legal reforms that the Initiative Group successfully advocated for includes changes to the Kyrgyz Water Code, the Law on WUAs, and the Code on Legal Violations. Together, they bring about significant changes for local irrigation management by removing previously existing legal obstacles which prohibited local authorities from intervening in irrigation water supply. Municipal authorities can now assume

	<p>responsibility from the local Water Use Association (WUA) to oversee the effective organization of irrigation service delivery. They can also change the ownership status of the local irrigation infrastructure – which until now officially belongs to WUAs – from private to municipal property. This will create additional funding opportunities, just as for any other municipal property. Furthermore, the Tariff Policy and the water users’ responsibility to pay the tariffs will change, too.</p> <ul style="list-style-type: none"> • Beyond the immediate policy change, IWIP/WAPROs efforts also generated qualitative outcomes. The time invested in advocacy-related trainings and capacity building, paid off in the form of increased credibility, legitimacy, and convincing power. While many Initiative Group members were initially of the opinion that they would never be able to change national legislation, they came to realize that common, coordinated action gives them political agency and influence. With this, IWIP/WAPRO did not just help to promote an important legal reform, but also helped to change the way how people perceive politics and their own role in it.
Madagascar	<ul style="list-style-type: none"> • The main priority of this component was the operationalization of management structures of the WUA through capacity building of members, which was indicated during the workshops with all the stakeholders of the perimeters. The members were supported on a socio-organizational level and acquired skills on decision-making mechanisms related to water management. • The series of capacity-building sessions allowed for the revitalization and operationalization of management structures, including five WUAs and one federation for the Manombo Ranozaza perimeter and 34 WUAs and three successive federations for the Mamovoka Andoharano perimeter.
Pakistan SRP Rice	<ul style="list-style-type: none"> • WAPRO interactions have resulted in cross learning and awareness raising, capacity building and uptake of best practices among multiple stakeholders. A key achievement in this regard has been the government’s efforts to transform its own extension advisory model to a targeted and outcome-based model jointly led by the private sector. WAPRO’s advisory model has been much appreciated and incorporated in the government’s strategy to bring about a paradigm shift in the provision of advisory services to farmers across Punjab. • The policy component was successful in navigating through the rigid political economy of water and power structures to bring together all stakeholders and initiate evidence-based dialogue to resolve issues in the rice sector. The policy component favorably developed partnerships; organized policy dialogues; activated water user associations and formed research collaborations to support efficient water use for sustainable rice production.
Myanmar	<ul style="list-style-type: none"> • After the military coup in February 2021, there were no policy related project interventions.
India Organic Rice	<ul style="list-style-type: none"> • The focus was on the dissemination of information related to project implementation on water use efficiency, achievements, and water stewardship activities to policymakers through workshops and meetings. The target audience were representatives of gram panchayats, government senior officials, government representatives (members of state legislative assembly called MLA), Agriculture Department, and the Irrigation departments. Four district-level workshops were organized involving local legislative assembly representatives, gram pradhans, agronomists, district and block development officers, agriculture officers, irrigation department officials, Krishi Vigna Kendra officials and progressive farmers.
India SRP Rice	<ul style="list-style-type: none"> • A webinar on water sustainability for agriculture was held in Haryana with an audience of more than 125 participants and nine speakers. • A partner and policy dialogue meeting on the validation of good practices was organized with decision makers leveraging the importance of SRP Rice and environmental issues at the regional (Haryana) and national level.
National Coordination India	<ul style="list-style-type: none"> • A policy note on the Water Security and Climate Change Adoption (WASCA) Handbook was compiled, which was created by the Government of India and GIZ and focused on better planning of village level water resources. • A working paper on groundwater-based irrigation for organic basmati in flood plains of Uttarakhand was created with the title “<i>Feasibility of groundwater-based irrigation in the flood plains of Koshi River within hilly tract of Uttarakhand state</i>”. • A policy note on Irrigation in the coastal saline areas of Saurashtra, Gujarat was compiled with the title “<i>Sustainable irrigation for cotton: A support from enhanced groundwater resources at Semi-arid Taleja taluka in Gujarat State, India</i>”.
National Coordination Pakistan	<ul style="list-style-type: none"> • Regarding stakeholder engagement for policy dialogue, the rigorous consultations have led to an enhanced understanding of the importance of water efficiency and sustainability among all stakeholders. WAPRO interactions have resulted in cross learning and awareness raising, capacity

	<p>building and uptake of best practices among multiple stakeholders. A key achievement in this regard has been the government’s efforts to transform its own extension advisory model to a targeted and outcome-based model jointly led by the private sector.</p> <ul style="list-style-type: none"> • Policy advocacy for the uptake of SRP standards has led to the approval of the SRP national chapter for Pakistan. The National Coordinator has actively pursued the formation of a national chapter for Pakistan and lobbied with multiple stakeholders to launch the SRP national chapter in this regard. Two national level consultations were held in this regard and a national working group was formed to discuss the future of sustainable rice through the SRP national chapter after WAPRO.
--	--

3.8. Achievements for water stewardship activities in each sub-project (Indicator 8)

While the previous chapter discussed the policy accomplishments overall, this chapter focuses on the water stewardship specifically. The indicator 8 is determined as “*Achievement of Alliance for Water Stewardship step 1, 2 and 3*” and revolves around the Outcome 3. Hereby step 1,2 and 3 refer to the 6 steps of the AWS standard. While WAPRO Phase 1 focused on step 1 and 2, Phase II additionally focused on step 3. The steps include the following:

1. Commit: 1.1 Establish a leadership commitment on water stewardship 1.2 Develop a water stewardship policy;
2. Gather and understand information on site, scope, stakeholders and water resources
3. Plan: Develop a water stewardship strategy and plan.

Regarding the target, it aims for each project to define and commit key partners for water stewardship and for each project and their key stakeholders to have a joint understanding of water resources and users as proposed by AWS standard step 2.

Subproject	Key achievements
India BCI Cotton	<ul style="list-style-type: none"> • Project-level informal committees have been formed in five project villages to implement and monitor water saving and water harvesting related work. Additionally, one Apex-level formal watershed committee has been established. This committee is constituted of ten members and represents the five watershed project villages. CSPC aims to strengthen the committee and consolidate its role with the objective to present it as a model at district level and eventually at national level. CSPC’s support to the committee will continue beyond 2022. • As a part of social mobilization under water stewardship, they conducted a three-day water budgeting exercise. The water budgeting exercise was conducted in eight project villages including five watershed project villages. Moreover, CSPC has entered a new partnership with the technical agency called Ekatvam Innovation Private Limited for designing and collecting data through multi-stakeholder decision support tools for participatory water management in five project villages.
India Organic Cotton	<ul style="list-style-type: none"> • They initiated water and natural resource mapping by participatory rural appraisal under leadership of the women groups and engaging community members. 85 water resources maps were completed, and 20 cluster-based water stewardship plans are prepared during the entire phase. All women group members participated in trainings on water stewardship issues. During the year 2022, women groups created four cluster-based water stewardship plans. • A network between community, village, and district level governments is being explored to promote water stewardship, such that the water stewardship work continues beyond the WAPRO project.
Pakistan BCI Cotton	<ul style="list-style-type: none"> • All the producer units of REEDS developed and revised their water stewardship plan at the level of the producer units after getting trainings and implemented them at field level. • They have implemented 17 Revised Water Stewardship action plans of the producer units properly.
Tajikistan	<ul style="list-style-type: none"> • Six irrigation maps and six water efficiency use plans were developed for each target WUA. They serve as a tool for timely and quality planning and facilitate monitoring of rational water distribution at the WUA level and improve overall management of water resources at WUA level. • One of the biggest achievements of the project was the creation and running of the WAPRO Project-led Working Group (WG) of the Tajik Syr Darya River Basin Council on Water Use Efficiency and Productivity. The WG is a technical body subordinated to the Syr Darya River Basin Council (RBC). The WG has provided a platform for like-minded stakeholders to address issues related to

	<p>improving the efficiency and productivity of irrigation water use. The WAPRO project, in collaboration with the National Water Resource Management Project (NWRM), backed-up the Working Group in studying and providing recommendations and suggestions for improving the efficiency and productivity of water use for irrigation in the Syr Darya River Basin.</p>
Kyrgyzstan	<p>Following the above-mentioned policy breakthrough and being aware that a new law alone does not yet guarantee concrete improvements for irrigation management, service delivery and people’s livelihoods, IWIP/WAPRO reoriented its strategic focus for the exit phase. Throughout 2022, IWIP focused on three activity lines:</p> <ul style="list-style-type: none"> • Sensitization & information campaign: From local municipalities and WUAs to national ministries, key stakeholders were informed about the new legal framework so that they are able and ready to apply it in practice and bring about positive change through improved local governance, infrastructure management, and budgeting processes. • Tariff methodology: The new methodology of irrigation water tariff calculation was drafted in close collaboration with the Water Resources Service, and eventually forwarded to the Ministry of Agriculture for approval. • Piloting with municipalities: IWIP/WAPRO accompanied 15 municipalities in Jalal-Abad and Osh oblast in piloting the new model of collaboration between WUAs and Local-Self-Governments (LSG) in terms of irrigation water supply management and maintenance of on-farm irrigation canals. Towards the second half of the year, all pilot municipalities had turned the new legal provisions into practice and voluntarily changed the collaboration model regarding on-farm irrigation infrastructure management and -water supply in their territory.
Madagascar	<ul style="list-style-type: none"> • Two Water management plans for the two perimeters (Ranozaza and Andoharano) have been developed and validated. These documents develop a diagnostic methodology with the ambition of identifying and understanding the problems of a perimeter and making the right decisions. They are validated at the regional level, i.e. by all stakeholders such as the Region, the Prefect, the District of Toliara II, the local agricultural and irrigation authority (DRAE) and the management structures • Diagnosis of infrastructures of the Ranozaza and Andoharano perimeters were carried out by the project team in collaboration with the Génie Rural: 292 infrastructures (on 44 km of canals) in the Ranozaza perimeter and 84 infrastructures (on 30 km of canals) for Andoharano were geolocated, inspected and evaluated.
Pakistan SRP Rice	<ul style="list-style-type: none"> • Water Stewardship plans have been instrumental in developing understanding of the water resources available to farmers. Farmers are now more concerned about water resource efficiency. Furthermore, dormant Water User Associations (WUAs) have been revived both on part of the members and government officials. RPL and Galaxy have mobilized 20 WUA to develop water courses with help of On Farm Water Management and irrigation departments in Gujranwala, Sheikhpura, Narowal and Khanewal. The forums are now used for regular discussions and dispute resolution.
Myanmar	<ul style="list-style-type: none"> • Under the stewardship of the WAPRO project, a total of five Water User Associations (WUAs) and 25 Water User Groups (WUGs) have been restructured to comply with the requirements of the National Civil Society Organisations (CSO) Registration Law and Participatory Irrigation Management (PIM) Guideline. • A total of 33 regular meetings by WUAs, WUGs and private sector enterprises have been organized to discuss water related issues, water scheduling and updating water use plans. 673 water use farmers, private sector enterprises and executive members of WUAs and WUGs (22% female) participated in the meetings. • Five water stewardship plans were developed and updated annually through bilateral and multilateral stakeholder meetings. A water stewardship implementation guideline has been developed with the help of an international expert and delivered to respective WUAs and WUGs.

India Organic Rice	<ul style="list-style-type: none"> • From 2016 until 2021, 120 Water and Environment Groups (WEGs) were formed. These WEGs were regularly trained and supervised, whereby their capacities such as water stewardship plan development, coordination with officials, awareness available schemes, arranging funds, and raising issues with appropriate authorities were enhanced. • WEGs have successfully accessed additional funding support from various sources, other than project money and received co-contribution in the implementation of 20 water stewardship proposals, related to water infrastructure, benefiting 2'700 families and covering an area of 1'200 hectares of farmland. • The project trained 40 WEGs on water stewardship planning at village level. Total 611 members were trained out of which 44% percent were women participants.
India SRP Rice	<ul style="list-style-type: none"> • 1'796 Water User Groups (WUG) members and 1'959 (1659 male, 300 female) farmers were trained on water stewardship and the SRP standard in thirty villages. A total of 43 training programs were organized during the year. • Literature on SRP standards and water stewardship was carried out to more than 6'500 farmers (entire duration of the project).

3.9. Crowding in of further actors (Indicator 9)

In the lifespan of the WAPRO project the main moment of crowding of new (private sector) partners occurred at the transition of Phase I to Phase II in 2018. Not only were new countries with new sub-projects added (Myanmar, Madagascar) but also new sub-projects in existing countries started (SRP Rice in India, Better Cotton in Pakistan) and therefore new partners joined.

In Pakistan with the beginning of Phase II a collaboration with IKEA was envisaged, a global key player on the fiber market. In spite of intense negotiations these efforts were in vain for two main reasons:

1. Phase alignment: The phases and the corresponding matching funds and contributions could not be aligned in way that the involved parties were happy with it.
2. Monitoring indicators: The monitoring indicators could not be agreed upon, particularly difficult was the monitoring indicator “volumes purchased”, which would have required IKEA to set up a traceability system.

Also, with the beginning of Phase II the probably most significant replication of the WAPRO project was initiated with the new sub-project “Rice Regional Value Chain Programme” in collaboration with the Islamic Development Bank (see chapter 5.2.). In this frame additional private sector partners expressed their interest in the WAPRO approach such as the renowned market leader in the rice business “Olam”.

In the course of project implementation during Phase II in certain sub-projects additional private sector partners joined such as a SCRIMAD in Madagascar as buying partner for Lima beans (“Pois du Cap”) and in Myanmar the rice producer and exporter “Golden Sunland” and several domestic rice mills catering to the domestic high end rice market.

Helvetas undertook several efforts to promote an extended collaboration between private sector partners and SDC, such as a joint meeting between Coop and SDC in July 2021 and between Better Cotton and SDC in April 2022. The latter possibly leads to a co-creation process between Better Cotton, Helvetas, SDC Coordination Offices and others facilitated by the SDC supported «Partnership Catalyst» of the Competence Centre for Social Innovation (CSI) of the University of St. Gallen.

Following the successful collaboration among partners from different origins in the frame of the WAPRO sub-projects around 20 follow-up actions are in different stages of concretization. Not all of them will materialize. Many of them involve additional new partners. An example is a joint project of the

renowned carbon expert “Southpole”, the standard organization “Gold Standard”, the Sustainable Rice Platform and Helvetas dealing with the reduction of methane emissions at scale through Alternate Wetting and Drying, a technology that has been widely adopted in the frame of WAPRO. To this end a joint concept note has been submitted to the new Global Methane Hub that was initiated after the climate COP 26 in Glasgow in 2022.

4. Critical assessment of outcome achievements

4.1. Results of the external evaluation

In 2022 SDC mandated KEK Consultants to conduct an external evaluation of the WAPRO Project. The following figure summarizes the findings in response to the OECD-DAC standards, whereas the rating is from 1: Highly unsatisfactory, to 2: Unsatisfactory to 3: Satisfactory and 4: Highly satisfactory. The evaluators praised the project for its relevance, coherence and likelihood of sustainability. Impact and effectiveness were rated as satisfactory. The most critical findings related to “efficiency”: On the one hand the evaluation lauded the cost efficiency as shown in a Cost Benefit Analysis and the timely implementation of the project results. On the other hand, the evaluators observed that «the project management style was lean, which was praised by many partners, however the lack of clear steering from SDC was seen by the evaluators as a missed opportunity. The project management lacked systematic and organized coordination and reporting and led to inaccuracy and opacity. Furthermore, though the intercountry exchanges were considered fruitful, intra-country exchanges – between the sub-projects and actors – could have been fostered more.»

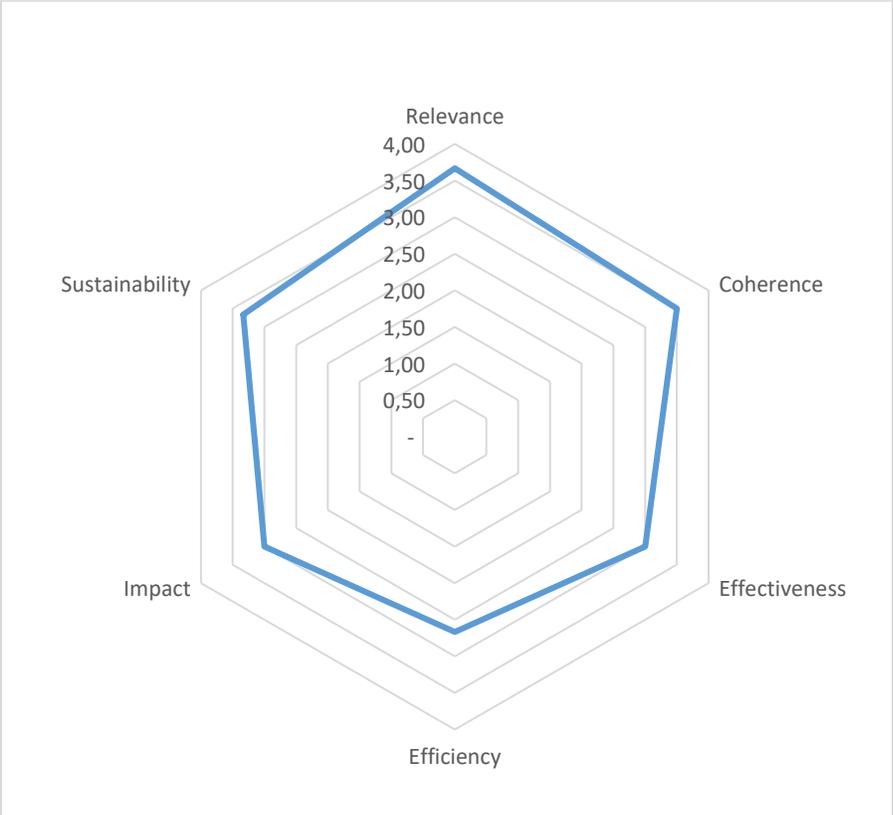


Figure 1: Results of the external evaluation of WAPRO conducted by KEK Consultants in 2022

The three main lessons learned resulting from this overall very positive evaluation are (adapted from the evaluation report):

1. WAPRO management speaks the **same language** as private sector partners. The similar mind-set, speaking the same language and addressing emerging topics (=sourcing; Corporate Social Responsibility; water productivity) have been the success factors for private sector partners joining WAPRO.
2. WAPRO's **investment in knowledge management and exchange** pays back: Mutual learning and knowledge sharing among participating stakeholder functions well, when there is lean management and a good knowledge management component on project management level.
3. WAPRO's **Push Pull Policy Approach** could be elementary in other projects addressing food systems approach: WAPRO tried to reduce complexity of a project approach, and working in six different countries with an integrative and comprehensive approach, but should be amended and better conceptualised for food security issues.

4.2. Assessment of achieved outcomes

The chapters above illustrate that all expected outcomes have been achieved and all targets were reached except the share of women farmers benefitting from the project (11% instead of the target of 15%). Explanations for this slight underachievement have been given (traditional structure of the society, male dominated ownership of assets such as land). This does not mean that sub-projects did not actively address the topic of gender inclusion. Examples include:

- The organic cotton project in India exclusively works with women farmers.
- The organic rice project in India worked exclusively with female extensionist who supported the Water and Environment Groups.
- Pakistan gender study: The working conditions for the rice transplanting women were assessed in detail revealing that despite of income losses a direct seeding technology would be appreciated by the actors. The idea was to find less tough engagement for the female farm workers than transplanting (e.g. weeding, crop management, etc.).
- A similar gender study was commissioned in the SRP Rice project in Myanmar. It concluded – among other findings – with the need and importance of gender adequate mechanization of rice production.

The discussion about gender hints at the even larger topic of “inclusiveness” of development interventions that largely depend on export-oriented commodity chains, as for example raised by the external evaluation, too. It is a fact that such interventions not necessarily address the poorest of the poor as they pre-suppose that the primary stakeholders are able to work and dispose of own or hired assets such as land.

Another topic that surfaced in the discussion at the occasion of the external evaluation is the absence of a specific indicator on “food security” despite the fact that the project was funded on the side of SDC by the Global Programme Food Security. It is common sense that an increased income of farming households contributes to an improved food security (particularly among small holding farmers as it is the case of the WAPRO households). In addition, there is evidence for the above statements from some of the sub-projects where this question was looked at specifically, such as in the organic rice project in

India where an external evaluation conducted by KPMG surveyed this question. The main reason not to include a specific indicator on food security is based on an agreement with SDC at the time of planning Phase II of WAPRO to keep the monitoring system as lean as possible.

4.3. Unintended effects of the intervention

Overall Phase II of WAPRO was implemented as planned with a one-year extension due to an interruption of project implementation caused by the pandemic Covid 19. No fundamental unintended effects were observed. The following issues constitute minor unintended effects:

1. **Methane emission reduction:** Globally the causes for and consequences of a changing climate have gained more attention during the time of implementation of WAPRO. While it was known at the outset of the project that Alternate Wetting and Drying in rice production not only increases the water efficiency but also reduces methane emissions (one of the main greenhouse gases) this aspect was never prominently included into the impact logic of WAPRO. During Phase II the topic gained importance: In the frame of the SRP rice project in Myanmar methane emission measurements were conducted and a reduction of up to 44% could be shown. The partner LT Food in India launched its own methane emission reduction program. In Pakistan, the United Nation Environment Program mandated Helvetas to research the potential of methane emission reduction. This may build the basis for future interventions and scaling of WAPRO approaches linked to carbon financing.
2. **Information Technologies for Development (IT4D):** The travel and meeting restrictions imposed by most countries due to Covid 19 caused a slowdown up to an interruption of project implementation in most sub-projects. At the same time, it however boosted the application of modern communication technologies not only for project management (e.g. virtual instead of physical meetings) but also for actually reaching out to farmers. The most prominent example among the WAPRO sub-projects are the so-called “Robo Calls” in the frame of the SRP Rice project in Pakistan. The local partners RPL and Galaxy Rice Mills introduced phone based agricultural extension activities and increased by this its outreach to an unintended scale. Within the WAPRO family the local partner LT Food in India is a pioneer when it comes to the use of phone-based applications for a two-way communication with SRP rice producers. LT Food uses for this purpose the application “Agreetha”. In 2022 WAPRO organized an internal learning and sharing event on IT4D where – among others – these applications were presented.
3. **Water metering in other crops:** In the WAPRO Phase I report we highlighted the extensive use and standardization of water metering in Tajikistan as an unintended effect. During Phase II this success continued again in an unintended manner: In Tajikistan water metering is today also applied in horticulture (orchards).
4. **Extension of sustainable crop production practices:** It has to be emphasized that it is one of the cornerstones of the project design to integrate ecological production standards. All of these standards - ranging from organic to BCI or SRP – involve a high emphasis for sustainable crop production practices. Since the value chain partners will continue to produce according to these standards also the sustainable production practices will be continued beyond WAPRO. On top, several sub-projects operate with a high ambition to replace synthetical pesticides with environmentally sound practices or substances. Based on guidance by Bionexx the sub-project in Madagascar applied a mixture of botanicals with locally collected and grinded Neem. BCI

Pakistan is a pioneer in the simple and affordable measures to create field habitats for beneficial insects thereby reducing the demand for pesticides significantly.

5. **Promotion of the Push – Pull – Policy approach:** Internal knowledge sharing of SDC’s Global Programme Food Security and a set of publicity efforts (see chapter 5.4.) combined with the recommendation of the external evaluation related to the Push-Pull-Policy approach applied by WAPRO triggered the interest of SDC section “Employment and Education” in this approach. Steps took place to share this approach SDC internally through related Regional Advisors further.

5. Output performance according to the Logframe

5.1. Accomplishments in relation to the planned logframe outputs

In general, the majority of targets for the impact and outcome indicators were fully or at least nearly achieved. All targets for the three impact indicators were fully achieved. Regarding the outcome indicators, four targets were fully or nearly achieved, and two targets were only partially achieved. *Table 11* below illustrates the target achievements in relation to the nine impact and outcome indicators. In the annex the logframe targets and achievements are demonstrated in more detail. The color meaning of the *Table 11* is as follows:

Green	Fully achieved	Light green	Nearly achieved	Yellow	Partially achieved
-------	----------------	-------------	-----------------	--------	--------------------

Table 11: Logframe outcome and impact indicators compared to target achievements.

Indicator	Target achievements
1. Number of m/f farmers involved in capacity building and value chains (and total land area of these farmers)	110’941 farmers (calculated without the farmers of Pakistan BCI Cotton), thereof 101’373 (ca. 91%) male farmers and 9’568 (ca. 9 %) female farmers.
2. Change of farm income (m/f)	In average the subprojects achieved an income increase of 121 \$ resp. 111,7 CHF/ ha .
3. of water productivity	In average the subprojects achieved an increased water use efficiency of 38,9% .
4. Adoption rate = Share of farmers involved in project that adopt water efficient technologies	In average the subprojects achieved an adoption rate of 87,07% . The average share of women farmers is 10,92% within the adoption rate survey.
5a. Crop productivity 5b. Enhanced adoption of agroecological principals	The crop productivity of the entire WAPRO project in phase II was increased by 16.5 % with a range from 5.8% (sub-project India SRP rice) to 30.7% (sub-project Myanmar SRP rice). Evidence of agrochemical inputs reduction through compliance with standards. No diversification increase except for Madagascar.
6. Purchase volume produced under water efficient technologies sold under improved conditions (price and other incentives)	The overall value of the products generated with improved WAPRO methods amounts to nearly 490 million \$. Without the huge subproject Pakistan BCI (which amounts to 306 million \$) the four project years achieved a product value of 183 million dollars .
7. Water productivity and water stewardship processes taken up in local and higher-level policy discussions	i. Policies were addressed by all subprojects expect from Myanmar because of the political situation. Policies were put into action by Kyrgyzstan, Tajikistan, and Madagascar (contracts, WUA). j. Tajikistan, Kyrgyzstan, India Organic Rice sensitized relevant governmental institutions. India BCI cotton, Pakistan SRP Rice, Pakistan BCI cotton, Madagascar, and Myanmar sensitized governmental institutions on village level.

8. Achievement of Alliance for water stewardship step 1, 2 and 3	In Tajikistan a Working Group of the Tajik Syr Darya River Basin Council on Water Use Efficiency and Productivity was created and India BCO Cotton formed project-level informal committees in 5 project villages and 1 Apex-level formal watershed committee has been established. In all subprojects Water User Groups, Water User Associations, Watershed Committees, or Working Groups were supported and created water stewardship plans, water resource maps, or irrigation maps.
9. Number of companies / institutions discussing, integrating or fully replicating the approach to foster stewardship of natural resources	SCRIMAD in Madagascar, Golden Sunland in Myanmar, and various rice mills in Myanmar are integrating the approach.

5.2. Islamic Development Banks and the Regional Rice Value Chain Project

5.2.1. Background and implementation basics

On the Annual Meeting of the Islamic Development Bank (IsDB) in Tunis in 2018 WAPRO was introduced by representatives from SDC, SRP and Mars (records of the session please see [here](#)). This session and subsequent discussions were the kick-start for the design of the Regional Rice Value Chain Project RRVCP. Ten member countries of the IsDB joined forces to strive for a more competitive and sustainable national rice sector, that is capable to successively replace the high imports from low quality (and thus cheap) rice shipments from Asia thereby aiming to unfold opportunities for local farmers. The implementation was split into two cycles of five countries in order not to overburden the IsDB project team with planning requirements.

- The countries of the first cycle are: Gambia, Guinea, Niger, Senegal, Sierra Leone.
- The countries of the second cycle are: Benin, Burkina Faso, Cameroon, Ivory Coast and Mali.

Following to the guidance by WAPRO each national RRVCP project contains the three components “push”, “pull” and “policy”. Albeit they were re-phrased to “production”, “private sector integration” and “policy” to give it a more independent spin and allow a clearer connotation to the content of the components. The WAPRO team of Helvetas headoffice had the overall implementation responsibility for the implementation of the Technical Assistance (TA) to this very project, while SDC Abu Dhabi took over a supervisory role. All TA components were based on the demands expressed by the Project Management Units (PMUs) of the implementing countries and the IsDB project team.

The TA components demanded and fully implemented are

- Framework for the Monitoring and Evaluation of the RRVCP (see chapter 5.2.3)
- Capacity building for rice farmer cooperatives (see chapter 5.2.4)
- Overview of utilization of by-products in the rice value chain (see chapter 5.2.5)

Further TA elements that were outlined and designed, but not implemented yet are listed in chapter 5.2.6.

5.2.2. Implementation status

The pandemic impacted the project implementation significantly. As the governmental actors – the PMUs of the countries of the first implementation cycle - were just underway to create the alliances for the local stakeholder partnerships and the corresponding tenders for infrastructures, the lockdown

commanded by the governments hit the intended milestone plan severely. In Guinea the military coup d'état of September 2021 inflicted an additional delay in the national implementation of the RRVCP. All five countries of the first implementation cycle have signed the loan agreement with the IsDB and set-up PMUs in the agricultural ministries with designated staff also for the Monitoring and Evaluation system (M&E). Gambia, Niger, Senegal and Sierra Leone managed to kick-off first production in season 2022/2023. The overall amount of rice produced and the corresponding acreage and jobs created should be available once the PMUs have uploaded the datasets into the M&E system, which should happen March 2023, when the data consolidation for season 2022&2023 is finished. From the second cycle of implementation the countries Benin, Burkina Faso and Cameroon have undersigned the loan agreement and are underway to set up the corresponding PMUs. All five countries plan to kick-off the production still in 2023/2024 season.

5.2.3. TA component 1: Framework for Monitoring and Evaluation

All involved stakeholders agreed that a meaningful monitoring system will be the core of the TA and an element where the countries lack expertise. Furthermore, the IsDB had the idea that the data could be well aggregated on their side. Thus, the intended M&E system shall not be a national one but spanning all RRVCP countries with a systematic data flow from the PMUs to the IsDB. With the help of the international CSO Rikolto the framework of this ambitious M&E system was developed and introduced to the RRVCP stakeholders in the kick-off workshop in Dakar in 2019. Since then, the developed system was intensively trained by Rikolto – though in virtual training sessions owing to the pandemic – and an integrated dashboard run on Power Bi was elaborated. The dashboard and first data entries from baseline studies have been elaborated [Access via <https://rrvcp.s2i-software.com> temporary access codes: user: *viewer*, password *isdbviewer*].

Though IsDB has to do some consolidation of double entries the actors are very content with the resulting M&E system. Aiming to allow a permanent and timewise fully independent self-training for the M&E framework for the PMU as well as the IsDB staff animated videoclips were elaborated. The inserted *Figure 2* below gives an overview and an idea of the didactical structure. The clips can be accessed via

[Introduction to the RRVCP M&E system \(padlet.org\)](https://padlet.org).

5.2.6. Further TA components

Based on discussions between SDC Abu Dhabi, Helvetas and the RRVCP stakeholders and owing to advice from Rikolto, the resources for further TA components and corresponding implementation were saved thereby avoiding an overwhelming of the PMUs on one hand and allowing for an evaluation of the partnership with IsDB on the other hand. Nevertheless, TA topics demanded by the PMUs and prioritized by the RRVCP staff of the IsDB were outlined based on WAPRO experiences and could be taken over by further partners (GIZ-CARI, Bill and Melinda Gates Foundation/Africa-Rice, UNDP, Lombard-Odier, etc.) or alternatively – depending on the continuation of the partnership between SDC and IsDB also with funding from SDC.

5.3. Major differences between executed and planned activities

In a general picture, all activities have been implemented as planned but within a period of four years instead of three years because of the pandemic Covid 19. For the same reason the sub-project in collaboration with the Islamic Development Bank could not complete all planned activities (see chapter 5.2. above).

5.4. Outreach

This outcome aims at scaling up WAPRO experiences. It consists of three elements:

1. Knowledge Management, capitalizing and sharing of experiences
2. Engaging in and with the three partnering Multi Stakeholder Initiatives
3. Extending approaches and learnings to the African continent through a collaboration with the Islamic Development Bank (IsDB) in the frame of the Regional Rice Value Chain Project (RRVCP), the 11th WAPRO sub-project.

5.4.1. Knowledge and experiences

WAPRO capitalisation events

Table 12: Capitalization of experiences respectively special closing events at the end of the project

Where	Event	Videos
Global	Virtual WAPRO Closing Event combined with a WAPRO Academy on «IT4D» on 12.12.2022	A 7' video presenting the key approaches and main results of WAPRO WAPRO – Multi-stakeholders join forces to enhance water productivity (helvetas.org)
India	«National Workshop on Water and Food Security» organised by Partners in Prosperity on behalf of WAPRO, 17.11.2022, Dehradun, Uttarakhand, India With presence and presentations of all four WAPRO sub-projects in India	
Pakistan	«Experience Sharing and way forward to WAPRO», 20.12.2022, Lahore with presentations of both WAPRO sub-projects in Pakistan	

Madagascar	Closing workshop on 24 November 2022	Video summarizing project experiences https://www.youtube.com/watch?v=nPooP2EgVqk&t=32s
Myanmar	No event due to the political circumstances	Documentaries on climate change, water and resource efficiency. <ol style="list-style-type: none"> 1. Changes in the field: https://www.youtube.com/watch?v=kdVB_EbYGjL0&t=134s 2. Land levelling: https://youtu.be/G82QbKIN0xQ 3. Water efficiency: https://youtu.be/k3tk_6XpUiE 4. Optimizing Input Usage - https://youtu.be/6qQZ6OJOgeo 5. Gender - https://youtu.be/2VbvEtxgQME
Tajikistan	No event	12' Video summarizing project experiences https://www.youtube.com/watch?v=VIBBs0Z7lpo
Kyrgyzstan	No event – project continues under a new name	

Key events

Table 13: Most important events where WAPRO contributed in 2022

Event	Description
World Water Week	The 9th World Water Forum (worldbank.org) themed Water Security for Peace and Development was organised by the World Water Council (WWC) and the Government of Senegal. The event takes place every three years and joins key international organizations, political representatives, donors, NGOs and business leaders to create dialogue and facilitate access to sanitation and water. Notably, the World Water Forum is the biggest event on water globally.
Water Productivity for Food Security session (2D1)	As part of the Water Productivity for Food Security session (2D1), the WAPRO project presented its PUSH – PULL – POLICY approach. The WAPRO topic sheets (see below) that were available in English and French attracted a lot of attention.
NADEL, ETH Zürich	WAPRO experiences and in particular insights gained from the collaboration with private sector companies were shared at NADEL and resulted in a podcast: NADEL-Podcast "1.90 per Day" (Link here).
German Textile Alliance Life Cycle Assessments	In March 2022 a presentation was held at the German Textile Alliance about Life Cycle Assessments (LCAs) results in cotton. The Working Group “natural fibres” of the German Textile Alliance was requesting an overview of LCA results. To educate about the water criteria in LCAs WAPRO was explained and the relevance of the combination of field level action and collective action in the water stewardship highlighted.
Conflict Partnerships University of St. Gallen	On invitation of Professor Alex Gertschen WAPRO experiences on the collaboration between different partners such as private sector companies and development organisations were shared in the frame of seminar of the University of St. Gallen under the title “Conflict Partnerships for a sustainable economy” on 8.11.2022

Publications

Table 14: WAPRO's insights and acquired knowledge were published through various channels.

Publication type	Title and Link
In 2022 WAPRO summarized key learnings in five topic sheets:	1. Water Saving Technologies in Rice and Cotton Production
	2. Learning for people and planet – benefits and challenges from the collaboration with three Multi Stakeholder Initiatives
	3. Collaboration with Private Sector Partners: 10 insights
	4. Water Stewardship in Small Scale Agriculture
	5. Participatory Advocacy for Better Irrigation
WAPRO experiences were presented to the development community in two articles in the magazine Rural21	Water saving technologies in rice and cotton production: Experience from Helvetas - www.rural21.com
	Food system transformation needs private sector support - www.rural21.com
Helvetas newsletter "Insights"	The November issue of the Helvetas newsletter "Insights" was dedicated to " Private Sector Engagement: Creating Partnerships Good for People and the Planet ", which was substantially based on insights gained from WAPRO.
SDC Magazine	To the general public WAPRO results were presented in the SDC magazine "Eine Welt" 04/2022 with the title "Weniger Wasserverluste, mehr Ernährungssicherheit" (p. 34 ff).

5.4.2. Multistakeholder Initiatives

The collaboration with the three Multi Stakeholder Initiatives (Alliance for Water Stewardship (AWS), Better Cotton (BC) and Sustainable Rice Platform (SRP)) continued. Helvetas is represented in the Technical Committee of the AWS and has been asked to join the governing boards of SRP and BC. The experience of the collaboration has been capitalized in the reporting period and was published as a WAPRO Topic Sheet # 2 as illustrated above.

5.4.3. Regional Rice Value Chain Project

WAPRO's main outreach activities happened in collaboration with the Islamic Development Bank as 11th WAPRO sub-project and as discussed in chapter 5.2. above. It constitutes a replication of WAPRO's Push-Pull-Policy approach in the rice sector and a transfer of knowledge and experiences from Asia to Africa including into a francophone setting.

6. Finances and Management

WAPRO went through two contract amendments between SDC and the implementing organisation Helvetas:

- In July 2021 a one-year project extension (to 31.12.2022) was agreed in response to delays caused by the pandemic. The extension included partly a budget increase, namely from SDC originally CHF 4,393,060 to CHF 4,993,060. This in turn required contract amendments with all

partners in all subprojects (except RRVC with the Islamic Development Bank), including an increase of the planned partner contributions by CHF 2,144,576.

- In November 2021 a second contract amendment from CHF 4,993,060 to CHF 5,078,880 was completed to include a) an extension of the sub-project in Myanmar (which was insecure beforehand due to the military coup in February 2021) and b) an additional experience sharing event at the World Water Forum in Senegal.

As an intern Luisa Quarta Kubioka supported the WAPRO management team at Helvetas from September to December 2022 on a part-time basis for project closing activities.

6.1. Percentage of budget spent vs planned per outcome

Table 15: Overview of budget versus expenses for WAPRO Phase II ((1.11.2018 – 31.12.2022, CHF)

WAPRO Phase II Budget - Expenses Comparison							
SDC Part	Helvetas Part		Budget (CHF)	Costs (CHF)	Balance (CHF)	Budget Utilization (%)	Explanations (Deviations > 10%)
1	101.1100	Overall Management	93,241,58	123,294,50	30,052,92	132	Higher coordination efforts than expected
	101.1200	Knowledge Management	129,140,00	129,173,78	33,78	100	
	101.1300	Backstopping Technical	512,191,58	512,051,63	139,95	100	
	101.1400	Administrative Support Staff	13,440,00	9,634,80	3,805,20	72	More efficient administrative support than expected
	101.2100	Travel	55,500,00	5,891,90	49,608,10	11	Less travel due to Covid 19
	101.2200	Accommodation	36,120,00	1,020,50	35,099,50	3	
	101.2300	Other reimbursables	30,942,00	20,388,51	10,553,49	66	Lower expenses due to Covid 19
		Services Head Quarters	870.575,16	801.455,62	69.119,54	92	
3B	323.4000	International and national short-term experts	210,420,00	222,522,82	12,102,82	106	Shift from external consultants for IsDB (404.3100)
	323.5100	Travel	61,250,00	16,136,78	45,113,22	26	Less travel due to Covid 19
	323.5200	Accommodation	26,200,00	9,591,69	16,608,31	37	Less accommodation due to Covid 19
	323.5300	Other reimbursables	3,965,00	4,367,16	402,16	110	
		3B Short-term experts (Consultants)	301.835,00	252.618,45	49.216,55	84	
4	404.1100	Tajikistan Cotton	269,999,00	250,084,23	19,914,77	93	
	404.1200	Kyrgyzstan Cotton	82,128,26	69,144,75	12,983,51	84	Exclusive focus on policy interventions led to lower than expected expenses
	404.1300	Pakistan Rice	540,218,00	480,409,53	59,808,47	89	Covid 19: Less costs for travel and meetings; exchange rate Swiss Franc to Rupee
	404.1400	Pakistan Cotton	130,499,00	94,786,00	35,713,00	73	Delayed start, shortage of matching funds; exchange rate Swiss Franc to Rupee
	404.1500	India	1,563,245,00	1,478,740,00	84,505,00	95	
	404.1600	Madagascar Rice	346,222,00	375,755,42	29,533,42	109	
	404.1700	Myanmar Rice	466,000,00	417,725,15	48,274,85	90	
	404.2100	National Coordinator Pakistan	58,266,00	44,200,92	14,065,08	76	Staff changes; exchange rate Swiss Franc to Pakistan Rupee
	404.2200	National Coordinator India	116,542,00	114,051,00	2,491,00	98	
	404.3100	Islamic Development Bank	333,350,00	160,052,17	173,297,83	48	Not all TA components implemented as per discussion with SDC Abu Dhabi
		Administered project funds	3.906.469,26	3.484.949,17	421.520,09	89	
		Total	5.078.879,42	4.539.023,24	539.856,18	89	
		Red: overspent					
		Green: underspent, deviation > 10%					

Table 16: Overview of budget versus expenses for WAPRO Phase II ((1.11.2018 – 31.12.2022, CHF)

6.2. Comments on budget deviations and over- respectively underspending
The total spending of the SDC budget of WAPRO for the entire Phase 2 reached 89%.

Substantial overspending (more than 10%) occurred in the Overall Management. The coordination among the many and very different partners in the project and the follow-up on administrative matters turned out to be more demanding than expected.

Covid 19 led to reduced costs for travel and face-to-face interactions but required substantial time for reprogramming and more frequent contacts with partners, whereby the virtual meetings implied additional efforts for on-line facilitation. An additional reason is that the WAPRO Managers at Helvetas head office were also involved in Technical Backstopping. It was not always easy to separate these roles when it came to registering time. Considering that the external evaluation praised the management for being lean and since the overall costs for part 1 (Services Head Quarters) are well within the budget we kindly request SDC to accept the shown expenses for "Overall Management".

In part 1 and part 3b the expenses for travel, accommodation and other reimbursables were substantially underspent due to the pandemic.

In part 4 one of the sub-projects (Madagascar) slightly overspent the budget. The sub-projects in Kyrgyzstan (cotton), Pakistan rice and cotton and the National Coordinator Pakistan show an underspending of more than 10%. Reasons are given in the table above.

The most significant underspending occurred in the sub-project in collaboration with the Islamic Development Bank. The project did not utilize all funds earmarked for external studies and consulting activities because due to COVID and other delays the PMUs of the RRVCP countries were established later than planned. It was decided to implement the project step-by-step aiming to avoid an overburdening of the management bandwidth of the PMUs and thus the three implemented TA components (M&E framework, cooperative capacity building and utilization of by-products) were prioritized.

6.3. Partner contributions

For WAPRO Phase II partner contributions of 11.5 Mio CHF (as compared to the SDC budget of 4.6 Mio CHF) were originally planned. With the phase extension of one year, additional partner contributions of 1.3 Mio CHF were agreed amounting to a total of 12.8 Mio CHF. The actual total of the partner contributions exceeds the originally committed amounts by 4.7 Mio CHF to reach 17.7 Mio CHF (+ 38%). With this the partner contributions almost quadrupled the amount spent by SDC.

Table 17: Partner contributions to WAPRO and comparison to budget; in CHF; USD converted to CHF: 1 USD = 0.92 CHF)

Sub-project	Crop	Partners	Budgeted contributions As per original SDC budget and contract amendment in 2021 (CHF)	Contributions by partners Total Phase (CHF)	Deviations from budget	
					Deviation (CHF)	Deviation in %
BCI Cotton India	Cotton	BCI, Tata Trust, CSPC	645.885	593.943	- 51.942	-8
Organic Cotton India (BioRe)	Cotton	BioRe (contribution plus premium)	1.171.526	1.512.362	340.836	29
BCI Cotton in Pakistan	Cotton	REEDS, BCI	347.800	188.380	- 159.420	-46
BCI Cotton in Tajikistan	Cotton	BCI, Helvetas, Sarob	250.000	251.810	1.810	1
Cotton in Kyrgyzstan	Cotton	Helvetas	251.675	515.714	264.039	105
Rice and medicinal plants in Madagascar	Diverse	SCRIMAD, Bionexx, BCI	870.000	516.991	- 353.009	-41
SRP Rice in Pakistan	Rice	Mars, Westmill, RPL, Galaxy (contributions plus premiums)	2.648.419	4.397.631	1.749.212	66
Rice in Myanmar	Rice	NORAD, Prime Agri	3.142.964	3.201.486	58.522	2
Organic rice in India	Rice	RMNU, Coop premiums, Coop Sustainability Fund	1.508.000	4.622.605	3.114.605	207
SRP rice in India	Rice	Mars, LT Food, Jain, Farmers	1.963.000	1.872.828	- 90.172	-5
Total			12.799.269	17.673.750	4.874.481	38

Table 18: Partner contributions to WAPRO and comparison to budget; in CHF; USD converted to CHF: 1 USD = 0.92 CHF)

56% of the partner contributions have been paid as premiums for compliance with organic, fairtrade and Sustainable Rice Platform standards (compared to 40% as originally planned). The higher amount of partner contributions as compared to the original plans occurred mainly because of higher amounts of premiums paid (+ 3.1 Mio CHF for organic rice in India and +1.5 Mio CHF for SRP premiums in Pakistan).

Substantial deviations (more than 10%) as compared to the original plans were:

- Actual contributions by BioRe exceeded the original budget by 0.4 Mio CHF; premiums were slightly below budget
- Contributions by BCI Cotton in Pakistan were lower than budget (- 0.16 Mio CHF) mainly because of a delayed start of the project due to an extended contracting period
- The organic cotton project in Kyrgyzstan benefitted from a more generous funding from a third party foundation.
- In the rice project in Madagascar the collaboration with PIC did not materialize, accordingly the contribution of 0.87 Mio CHF was not made. But this was partially compensated with contributions from other partners (Bionex, SCRIMAD and BCI of 0.5 Mio CHF)
- Mars' actual contributions in Pakistan for SRP rice were lower, but more than compensated with higher premiums (+ 1.5 Mio CHF)
- In the same project Westmill did not pay any premiums (minus 0.3 Mio CHF) but actual contributions slightly exceeded the planned amount
- Reismühle Nutrex (Coop), Organic Rice India, paid higher premiums than budgeted: plus 3.1 Mio.

At the time of reporting there were for several contributions reported no external verifications issued by independent third parties. This applies for

- Contributions and premiums paid by Coop for the organic rice project in India. However, these contributions have been checked by Helvetas and found to be plausible.
- Premiums paid by BioRe for organic cotton in India. This is pending.
- Premiums paid Mars for SRP rice in Pakistan and India. This is pending.
- Contributions paid by various partners for the rice project in Madagascar. However, these contributions have been checked by Helvetas and found to be plausible.

The main lessons learned with regard to partner contributions are:

- **Contract negotiations with (private sector) partners are resource intensive.** Major discussions turned around the need to provide audited figures of the partner contributions. This raised issues around the separation of contributions from other payments, the timing of audits (sometimes financial years don't match with calendar or project years) and the availability of audits at all.
- **Monitoring partner contributions requires regular follow up.** Particularly challenging is the monitoring of premiums. To cite an example: The number of transactions between LT Food and only Mars USA exceeded 300 transactions in 2020. .
- **The third party confirmation of contributions paid in the form of premiums turned out to be very challenging.** In the case of Coop/Reismühle Nutrex Helvetas received very detailed records, which Helvetas checked for plausibility. But there is no third-party verification. In the case of Mars, the discussions on this topic lasted for more than a year. At the time of reporting the external statement confirming the premiums paid by Mars was promised but not yet received. The challenge for Mars was threefold: First, there were literally hundreds of transactions that needed to be compiled. Second, although contractually agreed, the responsible officers at Mars were initially not aware of the requirement. Third, the responsible sustainability manager at Mars changed and discussions on this matter had to start again.

7. Lessons learned

This chapter provides an overview of the main lessons learned from Phase I and Phase II structured by the three components Push – Pull – Policy. WAPRO has compiled five topic sheets on 1. Water saving technologies in rice and cotton production, 2. collaboration with private partners: ten insights, 3. learning for people and planet, 4. Water Stewardship in Small-Scale Agriculture and 5. participatory advocacy for better irrigation. These documents include insights and summarize the main lessons learned of WAPRO. The following lessons learned presented here are in addition to them. The lessons have been presented to the project stakeholders at the virtual WAPRO closing event and put forward for validation. The WAPRO partners largely agreed to the lessons learned below except to the one on “policy” which accordingly has been reworded.

7.1. PUSH

The topic of greenhouse gas emissions should have been considered from the beginning of the project and treated with more attention and resources

The topic of greenhouse gas emissions was not prioritized at the beginning of the project, which is why WAPRO now has only limited evidence available. An additional focus on greenhouse gas emissions was suggested several times (e.g. initially in the Myanmar subproject) but got rejected. Reasons for the rejection were the feared additional complexity introduced to the project and the labor and equipment costs of on-site gas emission measurements. However, field trials like within the Climate Smart Rice Project in Myanmar have shown, how water management can be linked to greenhouse gas emission reduction. As an example, they found that the SRP rice emitted significantly lower methane emissions (up to 44% lower CH₄ flux) compared to the conventional practice, while also increasing yield. The CH₄ flux was mainly affected by water management practice regardless of fertilizer application.

Implementing value chain projects is certainly worthwhile, but there is a need for a more holistic approach regarding social issues and inequalities

WAPRO did neither reach the poorest of the poor nor a satisfactory share of women. However, this is a general problem of value chain projects. To address this issue, value chain projects need to be combined with other approaches such as the social protection approach where money is directly distributed to the poorest or landscape assessments that may trigger investments by government schemes and others. A possible solution offers the approach used by a value chain project in Tanzania, where an organic cotton project was linked to saving and credit groups. The experience during Covid – 19 and the transformation towards virtual services have shown the multifacetedness of inclusivity and gender sensitivity. While farmers were generally reached well through virtual services, reaching the less equipped farmers was more challenging. Particularly women are often not the official holder of sim cards, hence only men’s numbers were registered. Additionally, gender sensitivity should be addressed in relation to specific technology approaches. For example, replacing direct seeding with transplanting can lead to a loss of work for female farmers.

7.2. PULL

The collaboration with the private sector can foster a project’s sustainability, but their engagement can also change abruptly

When it comes to the longevity of the project fostered through private partner collaborations two main aspects must be considered. On one hand, sustainability of project interventions is enhanced by private partners continuing to purchase from project farmers even after the project has ended. On the other hand, experiences have also shown that private partners engagement can change abruptly. Particularly regarding market or profit reasons companies can shift their priority in a short amount of time. For instance, when a participating corporation requested a different rice variety, one of the private partners changed the geographical area for the project. Although they have worked with farmers and water use associations at that location for two years, they decided to move to another area, where that rice variety grows better. A similar issue occurred in Madagascar where they worked on incorporating stevia as a new crop for five years and suddenly dropped it as their investors were not interested in that crop anymore.

Building cross linkages between private partners to create new export-oriented value chains for crop rotation products is challenging.

It was generally difficult to build new value chains by creating cross linkages between private partners. Even though there were several opportunities to connect partnering companies within the same value chain, none of the efforts materialized. For instance, in Pakistan one of our private partners is trading with guar beans as a crop rotation product and another partner produces guar beans. However, efforts to bring these stakeholders together and apply a diversification approach failed. Another example would be the introduction of leguminous plants such as lentils for crop rotation in Uttarakhand in the frame of the organic rice sub-project for the export market. Although an international buyer has bought said lentils, they have not succeeded to market them yet. In general, the WAPRO project did not succeed to identify export markets for crop rotation products, even though all knew how beneficial that would be for agronomic reasons and the livelihood of farmers.

Defining an indicator for the PULL component is challenging

We underestimated how difficult it would be to define the indicator for the PULL component. It has been become apparent that reliable figures in relation to product volume can be difficult to obtain. Therefore, it is useful to define the indicator jointly with the partners from the very beginning.

Beside the export market, domestic markets should be considered for value chain projects as well

In the frame of WAPRO the focus of the value chains has mainly been based on export markets. However, in view of the growing purchasing power in the global South combined with an increasing awareness among consumers for healthy food there are growing market opportunities for high quality and certified agricultural products. The example of Myanmar, which went through a political crisis that hampered the endeavors to establish export value chains for SRP rice, indicates that a focus on the high-end domestic markets for high quality rice would have been more promising.

7.3. POLICY

We overestimated the sphere of influence in regarding policy changes in larger countries

Wanting to influence policies in large countries such as India and Pakistan were unrealistic goals. However, although no legal changes were achieved, the awareness created, and gradual changes related to the collaboration with private partners in how policies are implemented may have a long-term impact.

7.4. OUTREACH

A virtual library accessible to everyone could have improved the spreading of water stewardship and water-saving technologies

While WAPRO comprehensively communicated about its work globally and in the countries, the dissemination of water-saving technologies and the international sharing of experiences on water stewardship processes could have been improved by establishing a virtual library open for non – WAPRO members.

Pre – determined objectives are not conducive for crowding in of new private sector partners

From Phase I to Phase II a number of additional – mainly - private sector partners joined the project. Thereby the experience showed that pre-determined objectives are not conducive for crowding in. It was rather the shared vision, the simple overall approach of “Push – Pull - Policy”, the combination of field level and collective action and the basic role division between public and private partners that was attractive for additional partners to join the efforts.

Aligning project phases and budget cycles is challenging yet relevant

A critical hurdle for the crowding-in of private sector partners is the alignment of project phases and budget cycles. If these do not harmonize coincidentally, a lot of discussions are required to find a reasonable and fair share of project resources and partner contributions.

8. Annexes

Annex 1:

Annual Reports 2022 of the WAPRO sub-projects with lessons learned for the entire phase

1	Better Cotton India	3
2	Organic Cotton India	32
3	BCI Cotton Pakistan	43
4	Cotton Tajikistan.....	54
5	Cotton Kyrgyzstan	69
6	Diversified crop rotations Madagascar.....	81
7	SRP Rice Pakistan.....	94
8	Climate smart rice: Myanmar.....	110
9	Organic Rice India.....	137
10	SRP Rice India.....	164
11	Pakistan National Coordination	193
12	India National Coordination	195
14	The Regional Rice Value Chain Project.....	258

Annex 2:

WAPRO Adoption Rate Survey Synthesis, 2022