ARCADE RSDH Report Summary

Project ID: 281930
Funded under: FP7-HEALTH
Country: Sweden

Final Report Summary - ARCADE RSDH (Asian Regional Capacity Development for Research on Social Determinants of Health)

Executive Summary:
ARCADE RSDH is a collaboration of thirteen institutions in Asia (Tongji Medical College of HUST – TJMC, CBCI Society of Medical Education – SJNAHS, Beijing Normal University – BNU, Indian Institute of Health Management Research – IIHMR, Zhejiang University – ZJU, Ujjain Charitable Trust Hospital & Research Centre – UCTH, Sultan Qaboos University – SQU, Hanoi Medical University – HMU, and Public Health Foundation of India – PHFI) and counterparts in Europe (Karolinska Institute – KI, Institute of Development Studies – IDS, University of Tampere – UTA) and South Africa (Stellenbosch University - SU). The project aimed to build sustainable training capacity in LMICs in Asia, to expand and strengthen research on health and its social determinants, and to develop locally designed strategies to reduce health inequity.

Activities
ARCADE-RSDH launched innovative activities to 1) Consult with national and international stakeholders to identify training needs, 2) Construct innovative web-mounted, freely downloadable doctoral course materials. 3) Implement these in doctoral courses using efficient blended (classroom/internet) methods. 4) Support student mobility for “sandwich” work-study. 5) Engage students with home country research on real health inequity problems. 6) Mentor students in cross institutionally networked, multidisciplinary research teams. And 7) Build local institutions’ capacity for research support (grant capture, management and accountability, and research dissemination).

Results
The consortium performed a thorough needs assessment of research capacity needs at partner institutes. Based on this assessment, and the agreed courses in the grant agreement, the consortium developed innovative blended learning and self-learning courses and modules. In total, 38 blended learning modules and courses were adapted or developed, of which 11 are freely available on the online course repository for students and lecturers globally. Sixteen blended courses were delivered, of which seven were delivered cross-institutionally. During the project period, over 600 students were reached by blended learning courses taught by ARCADE RSDH partners, of whom over 100 were PhD students and posdocs, and the majority women.

Consortium partners worked together in mentoring students. During the lifetime of the project, ARCADE RSDH partners wrote over 42 proposals together, of which 36 had a strong focus on RSDH research. Mentored students were involved in writing in 36 of these projects. Mentored doctoral and postdoctoral candidates wrote and submitted 24 projects for funding. The consortium also built grants management capacity at partner institutes through workshops. Consortium partners also engaged in considerable dissemination activity on the project and related outputs, using social media and traditional methods.

Through these wide ranging activities, all aimed at the broader goal of building capacity in research on social determinants of health in Asia, combined with project products (courses) available on the open course repository, ARCADE RSDH can have a long-lasting impact on research capacity globally.
Project Context and Objectives:

Introduction

ARCADE RSDH is a collaboration of thirteen strong universities and institutions in Asia and Europe, collaborating with South Africa, that target PhD and post-doctoral training in Asia with the aim of developing a sustainable research environment to foster a new generation of Asian researchers specializing in research on social determinants of health (RSDH).

Project settings

Karolinska Institutet (KI, Sweden) is the coordinator of ARCADE RSDH. Additionally there were twelve partners in total throughout the project, Stellenbosch University (SU, South Africa) and two northern institutions, Institute of Development Studies (IDS, UK) and University of Tampere (UTA, Finland). The rest of the universities and institutions are based in Asia. Two initial hub Asia universities Tongji Medical College of HUST (TJMC, China), CBCI Society of Medical Education (SJNAHS, India), and later Public Health Foundation of India (PHFI, India) became a hub. Also Beijing Normal University (BNU, China), Indian Institute of Health Management Research (IIHMR, India), Zhejiang University (ZJU, China), Ujjain Charitable Trust Hospital & Research Centre (UCTH, India), Sultan Qaboos University (SQU, Oman), and Hanoi Medical University (HMU, Vietnam). Asian partners led several work packages. ARCADE RSDH has a sister project, ARCADE HSSR, also funded by European Commission Framework 7 agreement.

Project focus areas

The project focused on creating innovative, blended and e-learning courses, building sustainable training capacity in LMICs in Asia, expanding and strengthening research on health and its social determinants, and developing locally designed strategies to reduce health inequity. With this focus, ARCADE RSDH intended to eventually impact on increasing research on social determinants of health and support country policy-makers in making evidence-based decisions. The courses were aimed at postgraduate students including master’s, PhD an post-doctoral students, while the capacity building activities were aimed at participating institutions.

Project aims

The project aims to build sustainable training capacity in LMICs in Asia to expand and strengthen research on health and its social determinants, and to develop locally designed strategies to reduce health inequity. The aim was to create this capacity through developing training resources and courses, institutional capacity development at two high level regional training hubs, and through South-South (LMIC) network development for training and research.

Specific objectives

Part 1: Research capacity needs assessment

Objectives:

1. To identify organizational strengths and areas for capacity development among Asian partners.
2. To identify and summarize existing research capacity development activities and projects in Asian countries, in the disciplines related to strengthening research on social determinants of health and health equity.
3. To identify learning modules needed for research competence in core curriculum. To review existing learning materials in China, India, Oman, Vietnam or elsewhere and describe their coverage, currency, copyright and availability.
4. To identify gaps in learning materials, and describe new modules needed, or identify existing modules for updating or adaptation.

Part 2: Learning module development

Objectives:

1. To review the identified teaching materials and review those which appear to have the highest potential for RSDH training.
2. In parallel with the needs assessment in WP2, to determine areas where teaching materials of sufficiently high quality are
not available, and develop materials to address these areas.

3. Based on the above, to compile training modules, each providing for up to 20 hours of didactic and self-learning materials tuition, covering the planned curriculum described by WP2.

4. To provide key learning materials, exercises and assessment procedures for each module.

Part 3: Blended learning platform and courses in hub institutions
Objectives:
1. To facilitate teaching/learning in innovative ways, by using appropriate technology and providing opportunities through decentralized learning.
2. To develop, and implement, a web platform on which modules can be mounted for download, with built in student registration, tools for interactive learning, and progress assessment and testing.
3. To develop the capacity of participating faculty and students in the use of information and communication technologies to support postgraduate studies.
4. To implement course modules in blended learning approaches – a mix of face-to-face, web based and self-learning courses at each hub university.

Part 4: Design and operation of networked group mentoring research projects
Objectives:
1. To develop joint research groups and programmes, led by faculty from Asian institutions, and with decreasing assistance from European faculty; in order to provide a framework for mentoring students in research.
2. Mentoring systems for graduates in sandwich model training, where they receive training in hub institutions, and take part in mentored research programmes in their home health system.
3. Creating a pipeline of masters students, doctoral students, postdoctoral research fellows with excellent training and mentored research experience to become faculty at partner institutions.

Part 5: Institutional capacity for joint training and research management
Objectives:
1. To establish joint training programmes between European partners and Asian partners; and between Asian partners.
2. To strengthen institutional grants office capacity at Asian hubs through transfer of standard operating procedures, and knowledge and experience exchange between European institutions and Asian institutions, and cross Asian partners.

Part 6: Institutional capacity development of dissemination activities
Objectives:
1. To establish a functional dissemination team in each Asian partner.
2. Define and connect with the key audiences for the course materials.
3. Produce high quality knowledge products in forms, which are accessible to target audiences.
4. Maximize impact, influence and uptake of the course materials among target audiences, particularly students and policy makers.
5. Develop capacity amongst partners in communications, engagement and dissemination to extend the reach of the programme.
6. Design, launch and populate a web space for the capture of project learning and outputs.

Project Results:
The work within ARCADE RSDH was conducted in six separate parts, each building towards a comprehensive approach to building capacity in SDH research in Asia.

Part 1: Research capacity needs assessment
SQU led the working group for the needs assessment and the data collection process. The aim was to scope research capacity development strengths, gaps and needs among the Asian partners, identifying needs across and needs unique to each
All the objectives were addressed through a structured data collection process using qualitative and quantitative methods. The data collection forms and interview guides used during data collection were adapted with permission from the ARCADE HSSR team. The forms were sent to universities asking for key people to fill them in, including admission officers, the dean’s office, PhD students and postdocs, PhD supervisors and ARCADE researchers. Interviews were conducted with PhD students and supervisors, focusing on issues such as application processes, motivation, improving PhD training and problems with PhD training. Interviews were conducted at SJNAHS, TJMC, UCTH, and SQU. Needs assessment forms were submitted by all Asian partner universities.

Further, information on RSDH-relevant courses was collected on pre-determined categories. These categories were developed based on a web-search of courses offered at departments that focus on social determinants of health or health equity at internationally recognized universities (Karolinska Institute, Harvard University, Stanford University, University of Heidelberg and Oxford University).

Objective 1: To identify organizational strengths and areas for capacity development among Asian partners.
Doctoral training related to Social Determinants of Health (SDH) and Health Equity (HE) was offered at most partner institutes in 2012 (SQU, ZJU, SJNAHS, UCTH, IIHMR, TJMC, HMU and BNU). The availability and distribution of staff knowledgeable of SDH was a challenge to capacity development. Where staff with RSDH skills was available, they were unequally distributed in RSDH relevant departments in China and Vietnam. In contrast, in India and Oman, there seemed to be an insufficient number of professors and lecturers focusing on RSDH.

University administrative capacities surveyed included grant management capacity and ethical review boards. Most partner institutes had a grants management office, but systems for grants management were being established at the time of the needs assessment in India and Vietnam. The grants received by the institutes were mainly from the government or international funders, also from private organisations in Oman in China. Some institutions had in-house funding. All countries reported priority given to public health focused projects. All countries had an ethical review board and all partners engaged in international research cooperation.

Objective 2: To identify and summarize existing research capacity development activities and projects in Asian countries, in the disciplines related to strengthening research on social determinants of health and health equity.
Existing research capacity activities at partner universities surveyed included research projects focusing on the topic. Between 2007 and 2012, nearly two-thirds of doctoral students at TJMC were funded on topics relevant to RSDH. In contrast, at HMU, four research projects that included cooperation between Vietnam and the Netherlands supported RSDH. Two of these projects explicitly funded doctoral students. As an example from India, at UCTH, four doctoral students and one post-doc were funded by RSDH related research projects. These projects included, amongst others, research on gender and tuberculosis, and maternal health.

Activities to improve research skills and training were offered in China before ARCADE (mentorship training, research seminars, funding opportunities information sessions, grant writing workshops, project management, scientific writing skills), India (grant writing, funding opportunities, project management, scientific writing skills), Oman (mentorship training) and Vietnam (mainly one day research seminars). However, these activities were poorly attended, because students had other priorities such as research work that prevented them from attending these sessions.

Objective 3: To identify learning modules needed for research competence in the core curriculum. To review existing learning materials in China, India, Oman, Vietnam or elsewhere and describe their coverage, currency, copyright and availability. The needs assessment surveyed the course modules available at each university. All universities had courses on research and evaluation methods. However, in the opinion of both students and their supervisors, students enrolled in PhD training had
insufficient knowledge about research methods for SDH and HE research. Other key gaps were identified as epidemiology, sociology of medicine/health behaviour, research capacity building and continuing education, health economics, health and human rights/gender equity. Further detail on the needs assessment can be found in deliverables for WP2 in ARCADE RSDH. All available courses were updated regularly (China, India and Oman) and most courses were run face to face on a regular basis.

Courses were not copyrighted in India and Oman and can therefore be adapted by others.

Objective 4: To identify gaps in learning materials, and describe new modules needed, or identify existing modules for updating or adaptation.

In addition to the course and module evaluation above, respondents to the needs assessment listed courses needed to build RSDH capacity. Through these exercises, gaps were identified as: Epidemiology, Sociology of medicine and Health behaviour, Statistical research and evaluation methods, and research ethics, Building research capacity / continuing education, Health economics, Health and human rights education / gender equity. Although statistical research and evaluation methods, and research ethics were largely covered by most partners, these were included as the respondents suggested that most doctoral students lacked basic research skills (e.g. research methods and data analysis). During part 2 of the work, on module/course construction, particular attention was given to addressing these gaps through ARCADE courses.

In all countries, the majority of students considered PhD courses to be adequate. However, most Indian students were also of the opinion that current learning materials do not consider cultural and regional aspects. Unlike Chinese, Vietnamese and Omani students, more than half of the Indian students also did not think that freely downloadable courses would increase the number of applicants for PhD training.

Developing progress indicators
In addition to the objectives above, SQU developed progress indicators for the project progress together with the project steering group members. These indicators were used during the project to evaluate activities towards targets and evaluate periodic performance. The table was included in each periodic report, and collected data on number of courses implemented, publications and international conference attendances, PhD applications, enrolled students, supervisor/PhD student ratio, funding accrued, stipends collected, number of students taking ARCADE distance or blended learning courses and number of protocols submitted to funding (and success rate).

Conclusion – part 1:
The results indicated that although Chinese partner institutions offered a wide range of HE and SDH related modules, none of the partner institutions provided sufficient courses to equip doctoral students with the tools needed to conduct research on these topics. Two possibilities were suggested to enhance the students' HE and SDH related research skills: sandwich programmes (where students are trained for periods at host universities and do most of their fieldwork in their home countries) and distance learning. Distance learning posed a second possibility to enhance research skills, but the findings of the report for WP2 suggested that distance learning, too, is associated with difficulties such as lack of initiative, cultural preferences regarding learning and teaching styles, language and most importantly insufficient access to internet and poor Internet connectivity. The report suggested these should be taken into consideration when developing courses for ARCADE RSDH. The results of the needs assessment were submitted as deliverables for WP2 in ARCADE RSDH, and results have been compiled in a manuscript that will be submitted to an international journal.

Part 2: Learning module development
At the beginning of the project the consortium established a WP3 working group of module developers and course convenors, coordinated by IDS and KI. In the early stages of the project the group held regular communications online. As the needs assessment had identified a number of areas for development in terms of learning modules to strengthen training in SDH in Asia, the WP3 working group used this information as a basis for starting to build courses/modules. The WP3 working group
also paid attention to the categories already identified in Annex 1, available expertise and identified gaps in curricula at partner universities. Through the involvement of SU and KI in both ARCADE RSDH and ARCADE HSSR resources could be shared between the two projects. Once courses were developed, these were placed either on the institutional platform, or the Open Course Repository (OCR) described in more detail in Part 6 below.

One of the key issues agreed on before module/course construction could start was the copyright policy to be employed during the project. The copyright policy agreed on by partners suggested the Creative Commons, Attribution-NonCommercial-ShareAlike licence as the overarching default copyright policy for ARCADE modules and courses. It is important to note that this policy could not supersede the copyright laws applicable in each partner country.

Objective 1: To review the identified teaching materials and review those which appear to have the highest potential for RSDH training

The WP3 working group met to review and identify the teaching materials that could be adapted for RSDH training. The group identified gaps in curricula on SDH and HE at Asian institutions and created a list of proposed courses and a common format for course description (see 1st RSDH Periodic Report submitted in June 2013).

Four existing courses were identified for adaptation to e-Learning: Improving Drug Use by KI, Health and Development by IDS, Climate Change and Social Determinants of Health by IIHMR in collaboration with IDS and Health Economics by ZJU. The MA module Health and Development at IDS was used to develop two online learning modules: Environment and health and Introduction to Research Methods. Many SDH courses are protected by copyright or require permissions; thus the focus of ARCADE RSDH was on developing new modules, or using resources to support the updation or adaptation of courses at the partner institutes.

As the project developed and partners focused on developing their own content for the learning modules, communication became less frequent and more informal. However IDS continued to collect and share data on the learning modules in development biannually and in line with reporting requirements and deadlines. This data was presented and reviewed systematically at each consortium meeting.

Support for new module developers was provided on an ad-hoc basis throughout the project through IDS and KI and through work package workshops. IDS and KI also created and shared a number of learning material templates such as PowerPoint slides, e-textbooks, and Word documents that include all required branding and logos and ensure that the learning materials are presented in a more customised ARCADE format. A special workshop for WP3 was held in Stockholm in June 2014 to share information about how to develop online, blended learning courses and to connect course developers with resource staff. KI also employed a member of staff who formatted and branded the learning material, and ensured the copyright policy was followed before publication on the OCR. This was introduced to improve the quality and presentation of the learning materials. Through these processes, the consortium assessed the relevance of teaching materials to the RSDH curriculum outlined in the WP2 needs assessment and the ‘Description of Work’ in Annex I of the Grant Agreement. A number of courses were also peer-reviewed by partner staff. These experts were identified through email invitations. They were asked to give written feedback on module content.

Objective 2: In parallel with the needs assessment in WP2, to determine areas where teaching materials of sufficiently high quality are not available and develop materials to address these areas

The WP3 group paid close attention to the WP2 findings and identified courses to be developed based on the needs assessment and the Annex 1. Table 2.1 below indicates the courses developed and their fit to the two sources of data.

Table 2.1: Coverage of learning modules as per annex 1 and WP2

The broad range of disciplinary expertise across the consortium contributed to the variety of learning modules developed. Whilst there is some overlap of learning modules covering similar topics, the disciplinary approach and/or the regional context
for the module has often differed and so the view has been taken to include modules where this is the case. For example, there are two courses that introduce the social determinants of health. The first- “Social Determinants of Health” by UTA-outlines the main lines of thought in this field of study and gives a basic understanding of the current state of theory and practice. The other course- “Introduction to the social determinants of health – Indian Perspective” (developed by SJNAHS) looks specifically at the Indian context.

The selection of learning modules being developed changed as the project progressed. This was due to a number of factors including the availability of experts and resources at the institutes and the coverage of courses that the other institutes were developing.

Objective 3: Based on the above, to compile training modules, each providing for up to 20 hours of didactic and self-learning materials tuition, covering the planned curriculum described by WP2

In total, 38 blended or self-learning modules were developed during ARCADE RSDH. Some of these were directly based on existing face to face courses Of the total learning modules produced, 20 provided over 20 hours of didactic tuition (see table 2.2). All of these modules were either uploaded onto the developer’s institutional teaching platform and/or onto the ARCADE OCR. Nine modules developed within ARCADE RSDH included training on disseminating research training to policymakers. IDS also created a short learning module on how to develop a policy brief to engage with and influence a policy audience.

Objective 4: To provide key learning materials, exercises and assessment procedures for each module.

The format and content of the teaching materials were determined by the institution delivering the course/module. As can be seen from Table 2.2. above, the format of the learning materials developed by the consortium varied widely. The choice of format was determined by a number of factors; a) how suitable the format was for the content, b) the technical capacity and ability of the lead institute, c) the resources and time available to that institute and d) the pedagogic approach of the institute or lecturer involved.

The learning modules developed include, amongst others, a core collection of teaching materials- an etextbook (giving an overview of the course and guiding the student through the different sessions and teaching materials); teaching materials such as lectures and presentations, and reading lists. Many of the courses also include exercises and/or assessments for students to test their knowledge.

All of the lectures were delivered in a powerpoint or PDF format (to avoid any bandwidth issues) and many partners also included video lecture content in their courses, which can add a more engaging dimension to the online content. For example all of the lectures in the Environment and Health course that IDS produced were developed in a video format and consist of a voice over with well-crafted slides. The lectures are split into shorter max 30 min parts to enable students to stay engaged. IDS also developed an introductory video of the module convenor introducing the subject material and explaining how the student can interact with the online material.

As the project progressed many partners experimented with educational technology and the format of how to produce innovative elearning content. For example, IIHMR added two innovative multimedia teaching and learning resources for their course ‘Climate Change Society and Health’. A short film (http://bit.ly/1Pf2YXW) and a photo-voice booklet (http://bit.ly/1Z5rMH7) were co-produced with the Future Health Systems programme to provide case study materials for the course. PHFI also experimented with short educational films directed at students and the public. The films featured experts talking about selected SDH issues, such as mosquito breeding and water, toilets, open defecation and water, hand hygiene, sanitation and water and expert interviews on social determinants of health.

A number of courses have also developed case study material to update existing learning modules. This has added depth to the core content and also contextualises the teaching on specific thematic areas with real world examples. For example BNU
and IDS have produced 3 case studies in the learning module “Health policy process in China: A Complex Adaptive Systems perspective” to show how a CAS approach can be applied to particular health challenges that China faces through a Complex Adaptive Systems. The three case studies were in the form of presentations on Essential Drug Policy, Mental Health and Anti-Microbial Resistance.

Conclusion – part 2
The ARCADE RSDH consortium successfully adapted or developed 38 modules relevant to RSDH capacity building in the Asian context. Many of these had learning materials over 20 hours; reading lists and most had exercises and assessment procedures with an e-textbook. Not all modules/courses were transferred onto the OCR for free distribution, though they were developed and supported at institutions. One of the reasons for this was institutional and national copyright policies. In addition, in China and in Vietnam, the courses were often in the local language and thus developers felt that it was not relevant to transfer courses to the English-language OCR. The work in part 2 has resulted in a good coverage of topics identified both in part 1 and the original grant agreement, thus furthering educational materials available in low- and middle-income contexts on research on social determinants of health.

Part 3: Delivery of post-graduate blended learning courses

Objective 1: To facilitate teaching/learning in innovative ways, by using appropriate technology and providing opportunities through decentralised learning
The first task in part 3 was identifying appropriate software for facilitating teaching and learning in innovative ways. The close connection with ARCADE HSSR aided this process. One of the key choices was to choose a platform on which blended courses could be mounted. Initially the consortium thought to use Webstudies for hosting courses, but SU, which already used it, considered the platform unstable. Looking into the issue, and realising that the country and institutional contexts prevented an one-size-fits-all approach, each partner was advised to use their own platform or to use Moodle if none were available. Moodle is open access and regularly updated and thus suits the low- and middle-income context well. The online platform was combined with videoconferencing software. Here, lecturers had a free hand in using the software they were most comfortable with – often resulting in use of Adobe Connect, GoToMeeting and Skype. The combination of online learning platforms and softwares allowed the connection of entire classrooms across partners (as in the Introduction to Drug Use course by KI) or students to attend courses where they wished (as in the Qualitative Evaluation in Health Care course). The flexibility allowed for partner institutes and lecturers allowed them to use the software most familiar, convenient, and best suited to their context (particularly in relation to bandwidth availability).

ARCADE RSDH also experimented with new technology, including MiniSip, which was a teleconferencing software developed by the Royal Institute of Technology in Sweden (KTH). The consortium conducted Minisip feasibility research, which indicated that the tool had potential for implementing courses though bandwidth remained a challenge. As the interest and research in MiniSip waned at KTH, ARCADE RSDH could not continue using the software. The project also contributed toward the establishment of videoconferencing infrastructure at hub institutes.

In order to further facilitate the use of technology in teaching and learning, TJMC contacted experts to determine how effective blended learning could be used at hub institutions. Following from this work, TJMC developed a protocol for implementing blended learning during the Principles and Methods of Epidemiology course, which was approved by the TJMC dean’s office and thus spread the project idea, blended learning approaches, further into university structures.

The facilitation of teaching and learning in innovative ways will continue at IDS, where Sophie Marsden, project manager for ARCADE RSDH is advising senior management on integrating online learning into curricula, and will develop an elearning strategy and elearning content. The mHealth course originally intended as a self-study course on ARCADE is also being run as a blended course in Spring 2016 at IDS. In addition, IDS will explore using ARCADE developed self study modules in teaching curricula. Finally, both IDS and KI are part of the Health Systems Global Teaching and Learning Thematic Working group. IDS
will have a role in the group’s activities at the Health Systems Global Symposium in Vancouver in 2016.

Objective 2: To develop, and implement, a web platform on which modules can be mounted for download, with built in student registration, tools for interactive learning, and progress assessment and testing

Online learning platforms were made available at most partner institutions (see table 3.1 below). Access to courses is available through registration on the site. Through these platforms, students were able to register and enrol in courses, access documents, view uploaded lectures and complete assessments. In addition, the sites allowed interaction between students, tutors and lecturers where necessary.

To facilitate the use of Moodle for institutions without a pre-existing online learning platform, KI first hosted a website that served as a collaborative construction platform, where partners could share information about course construction. Later, this website was also used for hosting courses.

The sites are fully functional, and provide an effective virtual learning environment for students on ARCADE courses. Each partner hosting a new Moodle site for ARCADE dedicated time to developing it further, making it more accessible and user-friendly to students. Since Moodle is open source software, the choices were abundant for customising it for each institute, thus enabling partners to create their courses with their own identity and preferences.

Finally, to ensure that the courses developed also continue to be used after the closure of ARCADE, KI took the lead in developing the ARCADE Open Course repository (OCR) ([http://arcade02.phs.ki.se](http://arcade02.phs.ki.se)). This repository hosts 20 courses (11 RSDH, 9 HSSR) and is continuously updated. The OCR provides a freely accessible one-point entry platform to the courses from ARCADE HSSR and ARCADE RSDH. Course materials can be utilized by students for self-study or be used by faculty who would like to adapt a full course or part of it for their teaching. Further detail on the OCR can be found in part 6 below.

Objective 3: To develop the capacity of participating faculty and students in the use of information and communication technologies (ICT) to support postgraduate studies

Capacity building for staff and students to use ICT to support postgraduate studies in the ARCADE RSDH project was collaborative. The project initiated a Technical Working Group (TWG), which included IT professionals and course conveners to discuss and learn about software options and constructing courses. Information about different available ICT, software and hardware, as well as experiences of delivering courses was shared in the TWG. Combined with this approach, the Moodle practice site at KI, and dedicated IT staff at KI and researchers at IDS were constantly available to support course conveners and lecturers in developing their skills in using blended learning technologies. The consortium also developed manuals for teachers and students on how to use the e-learning platform, which were downloadable from the TJMC, PHFI and KI Moodle platforms.

To support sharing of experiences, some staff exchange visits were conducted between European partners and Asian partners in order to support each other through the exchange of materials, experiences, skills and staff. For example, IDS conducted exchange visits with regional institutions (IIHMR and BNU) in particular to develop course materials. Research staff from IIHMR visited IDS in 2012 to discuss the proposed module on Climate Change and Social Determinants of Health, further meeting in Kolkata in 2013. Staff from India also visited KI to discuss course development and implementation during the project.

Partner institute staff was also encouraged to interact with online learning communities in their home countries. For example, KI staff attended the eLearning conference held in Dalarna in 2013 and 2014. Staff who attended conferences or courses was encouraged to share their learning with the wider consortium. These events were also used as part of ARCADE dissemination strategy, and staff attending either presented on the project or shared dissemination materials.

Formal training activities for staff were conducted in 2015. PHFI conducted a three-day workshop for participants from SU, ZJU, UCTH and PHFI among others on designing and delivering e-Learning courses. The focus was on enhancing students’ engagement in these courses. The workshop concentrated on e-learning tools and technologies, design and delivery of online
courses, quality in e-learning, challenges and opportunities of such courses, and methods to improve student engagement in e-learning. Best practices from Massive Open Online Courses (MOOCs) were also shared during the workshop. A larger e-learning workshop for the entire consortium, directed at lecturers specifically, was conducted in Wuhan, China in April 2015. The workshop focused on blended learning and capacity building. The workshop was well attended by representatives from KI, TJMC, BNU, ZJU, PHFI, IDS, HMU and from three other universities in Wuhan attended the workshop.

Objective 4: To implement course modules in blended learning approaches - mix of face-to-face, web based and self-learning courses at each hub university

In total, sixteen blended courses (fourteen RSDH courses and two courses developed within ARCADE HSSR but delivered also in ARCADE RSDH) were implemented within the project schedule (see table 3.2 below). Blended courses were either implemented at one partner institute, or they were delivered collaboratively across institutes. Students from all partner institutes were invited to attend seven blended ARCADE RSDH courses. In addition to these blended courses, self-study modules were also made available at partner Moodle sites. The modules are accessed for self-learning without credit being awarded to students.

Courses were also continuously improved during the project. As some courses, such as ‘Principles and methods of epidemiology’ and ‘Advanced statistics’ (TJMC) and the ‘Social determinants of HIV’ (SJNAHS) were implemented more than once, student experiences and preferences from the first implementation were taken into account when delivering the course again. Further, courses that were taken on from ARCADE HSSR were updated and improved upon with ARCADE RSDH resources.

Table 3.2: courses, participating universities and student demographics

The courses reached in total nearly 600 students over four years, with over 100 PhD students (including 4 postdoctoral students) and over 500 Master’s level students. Though many of the students were master’s level students, many of them were considered “senior” and preparing for PhD registration. Most students were female, with particularly more female PhD students attending courses. Students became interested in SDH topics and courses through dissemination activities, such as information sessions, posters, brochures and web based approaches.

The courses delivered within ARCADE RSDH were also evaluated using quantitative and qualitative methods. In addition, TJMC conducted a formal controlled trial to try to determine student preferences. Overall, student evaluations of courses were positive, and in the trial, TJMC students preferred the blended learning course format over traditional learning. Students particularly appreciated those courses that were delivered in collaboration with more than one partner university. These were reported to enhance the learning experience through interaction across sites, local examples and health problems in different settings.

Incorporating the courses into home-university curriculum and offering them on a continuous basis helped to build long-term sustainability for these courses beyond the project timeline.

Conclusion – part 3

Innovative teaching and learning methods were taken on board well by partner institutions. The initial hurdle of choosing software and IT and bandwidth challenges were mostly overcome. Several courses were delivered in ARCADE RSDH, both at partner institutions and across partner institutions. The project also supported transforming existing, SDH relevant courses onto online learning modules/courses. Student evaluations of the courses implemented suggested that they appreciated the course format, and felt that particularly collaborative courses had benefits for their learning. One challenge in the implementation of courses across institutes was country differences, in terms of language, time zones, bandwidth availability and even legal administrative issues at universities, such as gaining credits for degrees from courses attended. Regardless of these challenges the consortium succeeded, in the period of four years, bringing the issue of technology enhanced learning
Part 4: Design and operation of networked group mentoring research projects

In this part of the project, the focus shifted from course construction and delivery to building broader capacity, including linkages between universities in research and teaching. This part was initially led by SJNAHS for the first 36 months, after which KI took the lead for the last period of the project.

Objective 1: To develop joint research groups and programmes, led by faculty from Asian institutions and decreasing assistance from European faculty; in order to provide a framework for mentoring students in research

Three joint research programmes were developed in the first period of the project with built-in funding for post-graduate students, and joint mentoring by European and Asian researchers. These research programmes were between SJNAHS and KI; TJMC and KI; and IIHMR and IDS. More detailed information is available in D5.1: Report on two or more cross-institutional research programmes, led by each of the Asian hub partners.

The consortium worked hard to secure further funding for students and staff, and submitted 42 proposals during four years. Twenty-nine of these involved at least three partner institutions, and 16 were led by Asian institutions. Thirty-six projects had a strong focus on RSDH. Mentored doctoral and postdoctoral candidates submitted 24 projects. In total, 36 projects also had funding for students/faculty (More details in Deliverable 5.2). Unfortunately, few of the large-scale collaborative funding proposals submitted during ARCADE RSDH were successful, which limited the attachment of students to the project through project work. In addition to the proposals submitted, some proposals were under development at the end of the project. The newly developed proposals and also some previously unsuccessful proposals which will be revised will be submitted in the near future to promote further collaboration among partners beyond the lifespan of the project.

Besides developing joint research programmes, in the context of providing a framework for mentored research within ARCADE, the capacity building activities focusing on both grant writing skills as well as mentorship and supervision capacity were actively conducted within the project, especially in the second and third period.

Grant writing is a key research skill that fosters the development of an academic career. Grant writing also enables capacity building among young researchers, through interaction with senior researchers. Consortium partners (IIHMR, PHFI, KI, HMU, UCTH) organised six grant writing workshops for students in China, India, Sweden, and Vietnam, which reached over 120 participants.

Mentorship and supervision capacity in partner institutions were also strengthened during the project. Many students received supervision from senior researchers from other institutions, which promoted the knowledge and skills exchange between partners and built capacity of mentors and mentees at both institutions. At least eight students were cross-institutionally supervised for master’s studies on SDH relevant topics by ARCADE-linked faculty from KI, UCTH and IIHMR among other institutes.

Networking and finding collaborators for the cross-country research was key to the development of new international projects. During ARCADE RSDH, many network activities also happened within and beyond the consortium. For example, PHFI staff visited partners in China, Sweden and Finland in order to identify common interests and promote joint proposals development. IDS and KI also visited India and China several times and organized network meetings for discussing collaborations and development.

Objective 2: To develop a mentoring system of graduates in sandwich model training, where they receive training in hub institutions, and take part in mentored research programmes in their home health services

During the ARCADE RSDH project, there were three Master Students in the department of Public Health Sciences from KI who worked under supervision of RDGMC faculty. One of the PhD students at UCTH, Sarika Chaturvedi studies the quality of
maternal health services and received mentoring by PHFI faculty in 2015. Beside these, there are many young researchers and graduate students from Asian institutions attended short-term training or courses at other institutions within ARCADE RSDH. For example, several PHFI staff attended short-term training at TJMC and KI about blended learning and MOOCs, and students from HMU and UCTH among others participated in KI’s course on drug use. Students and staff from UCTH received training at KI and PHFI about research projects, PhD plans, student supervision, etc.

To further experiment with sandwich model training and support, ARCADE RSDH together with ARCADE HSSR developed a concept of “Research Clinics” as a means of granting students and staff access to international experts and information about their research. The research clinics were held in a form of scientific seminars, mainly conducted around area of student protocols and papers. During these sessions, different institutions were connected through web-links. Students would present their work, and an international expert would comment on the work in real-time, as well as often sending detailed comments via email. These seminars also had an audience consisting of individuals from global universities. This format of seminars both supported mentoring of students and created institutional collaborations. From March 2014 to November 2015 six research clinics were conducted, all focusing on issues relevant to SDH, with PhD and postdoctoral level presenters mainly from India and commentators from Eastern and Western Europe, the Americas and Africa. A description of the research clinics has been submitted to the journal Global Health Action as a short commentary (see attachment 1).

In addition to this, Chinese students were mentored to produce English language articles for peer reviewed journals. Ability to write in English, and mentors to help students, was one of the challenges identified in the needs assessment at Chinese universities. The programme engaged five mentors from European partners (two from KI and three from IDS) to provide English literature writing support for five Chinese students at TJMC and BNU.

As a joint activity for part 4, mentoring, and part 6, dissemination, mentoring was undertaken when junior staff from partners from UCTH, PHFI, IIHMR and SJNAHS contributed to special issue articles in the journal Global Health Action, and received support from senior researchers in the collaboration for publication. The articles were submitted in November 2015, and decisions are expected soon. Four other ARCADE papers have been published, and another one publication is under preparation by the junior members from TJMC. Three papers have been submitted and presented at national/international conferences by TJMC junior members, mentored by the researchers from ARCADE. The references of already published papers are included in the list of dissemination activities.

Objective 3: To create a pipeline of masters students, doctoral students, postdoctoral research fellows with excellent training and mentored research experience to become faculty at partner institutions

Participation in ARCADE activities, such as taking or teaching courses, participating in mentored publication can develop young researchers’ capacity that may facilitate their obtaining career opportunities at partner institutions. ARCADE RSDH created an enabling environment for students to pursue doctoral studies in RSDH through its various activities such as increasing access to courses, workshops and mentors and networking with peers from partner universities.

We collected data on students involved in ARCADE-related activities that we believe may be indicative of supporting young faculty (PhD students, and Post-docs) in their early career. In total, 14 young researchers/ post docs connected to ARCADE were employed at Asian partner institutions, and eleven PhD students are supported through ARCADE-linked grants. A total of 25 PhD students/ post-docs participated in mentored proposals writing; and 27 more received mentors’ support for writing manuscripts for publications. In total, 27 junior faculty members were involved in developing ARCADE courses at Asian Partner institutions; and as described earlier, nearly 600 students have so far benefited from these courses.

Conclusion part 4

Though securing additional funding for projects was a challenge, the consortium was very active in preparing proposals, with 42 proposals submitted during the four years. In addition to these, the consortium also expended considerable effort in mentoring young researchers through exposing them to grant writing, holding grants writing workshops and mentoring them
in writing. In total, 36 proposals also included funding for PhD students/faculty, and 24 proposals were submitted by students themselves. Unsuccessful proposals are likely to be rewritten for further submissions. In addition, the relationships built during ARCADE RSDH are likely to continue beyond the project duration, and develop into research and teaching relationships in future.

Part 5: Institutional capacity for joint training and research management

Objective 1: To establish joint training programmes between European partners and Asian partners; and between Asian partners

Discussions were begun at the beginning of the project on joint training programmes between Chinese institutions and between other partner institutions. The key challenges to these were identified as course accreditation problems and differences in educational systems. To facilitate the creation of joint training programmes the research interests of each ARCADE RSDH participant researcher were mapped to identify areas for building research programmes. Three programmes were created, as outlined in part 4 above and below:

1) IIHMR-IDS programme on Climate Change and Uncertainty consisted of two projects. The first one was “Climate Change and Uncertainty from below and above” funded by Economic and Social Research Council, UK, and included three senior and one junior researcher at Asian-based institution (IIHMR). The second project was a continuation of the research on climate change focusing on Climate Change, Uncertainty and Transformation had received financing from Norwegian Research Council included two seniors and one junior researchers at IIHMR.

2) The SJNAHS-KI research programme on Anemia research included two PhDs students and two postdoctoral researchers employed at SJNAHS. Within this programme, researchers presented posters at conferences and wrote publications The publications were disseminated at the National Cancer Grid meeting, where additional information regarding Arcade-RSDH e-learning modules and potential for cancer training modules were announced. After the removal of SJNAHS as one of the partners, the joint training programme activity between KI and SJNAHS diminished.

3) The BNU-IDS research programme focusing on health system change in a complex and dynamic context involved 4 researchers, including 1 PhD student at BNU. The results of the research carried out within this programme were published in Health Research and Policy and Systems Journal.


In addition to the above progress, some high level meetings between Asian and European institutes (KI and TJMC, SJNAHS and KI, IIHMR and IDS, HMU and KI, HMU and UTA) were conducted. ARCADE RSDH also investigated a possibility of developing training programmes between Asian universities. Institutional contexts, interest and progress on establishing joint training programmes were collected via survey and analysed. The challenges of lack of formalised funding to support development of joint programmes, lack of awareness of other partners’ competencies and expertise; and variable institutional contexts, structures and operational procedures were highlighted. The survey concluded that institutional contexts and young collaborations meant that formal MoUs were difficult to establish, though initial discussions revealed interest from most parties (see D6.1: Memorandum for negotiation and progress in establishing a joint training network for more detail).

In addition to joint training programmes, the consortium also explored creating faculty positions and facilitate postdoctoral career progressions. The partners all agreed to a postdoctoral career development policy, and endeavoured to follow it during the project (see D6.2. Policy on post-doc career development for content of the agreement). The policy addressed issues such as skills development in grant proposal writing, national and international networking and dissemination of career opportunities. To facilitate the implementation of the postdoc policy, a job section was created at ARCADE project website (http://www.arcade-project.org/jobs-3/) where the job announcements for Post-doc and PhD positions were updated weekly. The webpage also provides the links to the career sections of the partners’ institutions webpages and jobs announcements Coupled with the above formal efforts to establish a joint training network, informal mentoring was continuous between partners. Staff from different institutes could supervise students together and mentor them within courses. As an example, and
as also part of part 4 and part 6 of the project, Dr Henry Lucas (IDS) and Dr Salla Atkins (KI) mentored RSDH partners’ junior researchers in producing publications for the special issue on eLearning to be published in Global Health Action and other journals. Dr Henry Lucas (IDS) and Dr Weirong Yan (KI) also established a young authors’ competition as described in part 4 above, where senior staff from partner institutes could train young Chinese researchers to write international publications. In addition to involvement of European researchers, joint workshops particularly related to grants management were held by Asian partners, for example PHFI and UCTH (as described in objective 2 below); and PHFI and TJMC, who held a joint workshop on blended course development.

Objective 2: To strengthen institutional grants office capacity at Asian hubs through transfer of standard operating procedures and knowledge and experience exchange between European and Asian institutions, and across Asian partners

Grant management workshops were a key activity in ARCADE RSDH. This was considered a key activity to support institutional capacity building in SDH research. The first workshop was held by KI at HMU. All RSDH partner institutions were invited to participate. The programme of the workshop included NIH funding opportunities, NIH grants application preparation, EU and NIH grant management.

Further, two grants management and training courses were conducted at Asian hub institutions in January and February 2014. Members of the KI grants office Bjorn Kull and Eva Bjorndal visited SJNAHS in Bangalore and TJMC in Wuhan to conduct the workshops. Fifteen PhD students and five faculty members attended the workshop on 24th that addressed grant opportunities. The workshop focusing more specifically on grant management and setting up of a grants office was attended by three faculty members from SJNAHS, one from UCTH and IIHMR (Jaipur) each. Visiting financial management officers from several research groups of the SJNAHS participated in the workshop as well. These included groups from US based investigators from University of California at San Francisco and Research Triangle Parkway, SFO, as well as McMaster University, and Center for Global Health Research, Canada.

Following the training programme in India, ARCADE UCTH had four meetings with their local grant office about grant office management and shared with them information about grant management practices by other ARCADE partners. The team has also discussed standard operational procedures for grant management and reporting with grant office staff. UCTH also conducted two internal half-day seminars on grants management for young faculty and postgraduate students. The workshops were conducted by young researchers of UCTH /RDGMC who are also post doc fellows at Karolinska Institutet. Seven members of the accounts and financial departments participated.

A 3-day grant management workshop took place in 2014 in Wuhan, China. The first day of the workshop focused on Grants office development, including the history and examples of structure of the grants offices at KI and SU, as well as standard operating procedures. There were approximately 30 participants including researchers and research management workers of TJMC, BNU and ZJU.

In the last period, the consortium was particularly active in grants office capacity building. In May 2015, PHFI organised a grants management workshop. The workshop aimed to provide an overview of management aspects at the pre and post grant phases and highlight efficient management of various research grants and derive the best outcome from such grants. In total, 29 participants, including some from SQU, Oman and four from UCTH attended the workshop.

Further, in September 2015, PHFI facilitated a two day workshop at UCTH on grants management and research ethics. In total, 24 young researchers from UCTH and PHFI Gandhinagar participated in the workshop.

To conclude grants management capacity building activities, KI presented a workshop on grants management in the ARCADE RSDH final meeting in Hangzhou, China in September 2015. Ylva Linderson and Ylva Hultman from KI facilitated the workshop during the first two days of the review meeting. All partners except HMU had sent delegates to the meeting. At this meeting, a mailing list was created to share grant opportunities and standard operating procedures in future.

Conclusion – part 5

Three joint training programmes were instituted, though one was with an institution later removed from the consortium.
Though formal relationships did not take off as well as was initially hoped, the consortium succeeded in understanding each other’s contexts for future collaborations; agreed to a post-doc policy and conducted informal mentoring. Several high level meetings were conducted between the partners also within the ARCADE RSDH consortium, where opportunities for MoUs were discussed. In formal training, the consortium conducted several grants management sessions where European and Asian institutions could exchange experiences and views along with standard operating procedures.

Part 6: ARCADE output dissemination

Objective 1: To establish a functional dissemination team in each Asian partner

Each Asian partner created a functional dissemination team, where every project member at partner institutions was actively involved in disseminating ARCADE outputs. These included informing relevant audiences (as per the communication plan in objective 2 below) of available courses and ARCADE’s other outputs. TJMC, the leader of this work package, together with the ARCADE management team at KI distributed conference and event information that was relevant to RSDH. Where possible, these were also included in twitter feeds and on the project website. TJMC had also established a dissemination team particularly to facilitate disseminating ARCADE outputs already in the first period of the project.

In addition to active dissemination, members of the ARCADE consortium were also invited to attend the ResUpMeetUp training exchange in Kenya, which was organised by IDS with other partners. Whilst this was partly funded through ARCADE HSSR, seven personnel from three ARCADE RSDH partners (TJMC, IIHMR and IDS) attended the training exchange.

Objective 2: Define and connect with key audiences for the course materials

In order to facilitate defining and connecting with key audiences, TJMC developed a communication strategy to which all partners agreed to use and amend as necessary. This strategy is available on the project website (http://www.arcade-project.org/wp-content/uploads/2013/10/ARCADE-RSDH-communication-plan.pdf). The strategy distinguished different target groups, such as end-users (students, teachers, education administrators, other researchers) and other stakeholders (e.g. policymakers).

All partners took heed of the communication strategy and used innovative approaches to connect with target groups. They were actively involved in hosting and attending meetings, forums, workshops, symposia, seminars and conferences held at local, national, regional and at the global level. In total, 89 formal, in-person dissemination events were recorded during the project, together with 53 online events. Through these events, the objectives, plans and research findings from within the ARCADE consortia were shared with several groups of end-users and stakeholders.

Objective 3: Produce high quality knowledge products in forms which are accessible to target audiences

ARCADE RSDH produced a number of innovative, high quality knowledge products that were accessible to target audiences. The methods used to reach audiences quickly included memory sticks, newsletters, posters, brochures, flyers, the website, social media and even custom-made smartphone apps (IEcho https://play.google.com/store/apps/details?id=com.rdgardi.IECHO&hl=en). These are described in more detail under objective 4. Partners ensured that all content was visually appealing and had the maximum impact in communications.

At PHFI, a newspaper article was also published in a local daily newspaper, titled “what can India learn from China’s healthcare system?”, written by PHFI professors Jay Satia and Dileep Mavalankar. The article highlighted the progress made in China with regard to social parameters when compared with India’s healthcare system.

Finally, courses and modules high quality and accessible, the consortium developed the Open Course Repository (OCR - http://arcade02.phs.ki.se ). The repository was established to provide access to the course materials to a larger audience. The repository includes 20 courses from ARCADE HSSR and ARCADE RSDH from different contributors (See Table 6.1 below for
Table 6.1: ARCADE RSDH courses on the OCR

The course materials were released under Creative Commons Attribution Non-Commercial-ShareAlike 3.0 license. The ARCADE OCR is not password protected and allows anyone interested to access the training materials including course outlines, reading materials full-text open-access articles, practical examples and exercises use them for teaching or learning.

ARCADE RSDH partners communicated with stakeholders mainly through the website. In addition, the project has, together with ARCADE HSSR, contributed to a special issue to be published in Global Health Action and other peer reviewed journals. At the end of the project, 15 articles were published, accepted, under review or submitted. It is hoped that these publications will be published in 2016. These publications are listed under main dissemination activities under section 1.4 of the final report.

Objective 4: Maximise impact, influence and uptake of the course materials among target audiences particularly students and policy makers

The dissemination activities undertaken by the consortium can also be found in D7.1 Summary of dissemination activities throughout the project. As a summary, the ARCADE RSDH consortium employed a wide range of social media applications as well as more traditional approaches in publicising course occasions and course materials. Courses were advertised through Facebook, LinkedIn, Twitter, the webpage, posters, flyers, informal discussions and through collaborating projects. Courses are also advertised formally on university course sites where these were available at partner institutions. As often as possible, the consortium also endeavoured to share course evaluations with future students, ensuring that new generations of students are aware of others’ positive and negative ratings of courses.

The consortium also experimented with a Linkedin group for PhD students and young researchers. The group was shared between ARCADE HSSR and ARCADE RSDH, and had 55 members in November 2015. Since the project management team at KI focused more on Twitter feeds and facebook groups, the group became rather inactive.
In addition to the social media and general website, ARCADE partners were also encouraged to profile the project on their own websites. Several, including TJMC; IDS and UTA as well as of course KI included a writeup of the project on their website.
A mobile phone application, iECHO, was launched on the initiative by UCTH, in ARCADE RSDH. The application is designed for the purpose of sharing the latest information about health research and promoting education opportunities in postgraduate training with health care professionals in low and middle-income countries in Asia.
Current features of the application include 1) sharing information about ARCADE activities, including blended and online courses and workshops 2) promoting other online courses offered by organisations such as World Bank, Coursera etc and 3) promoting publications, conferences, workshops and funding opportunities worldwide. The application is free of cost, readily installable from Google Play and available on all android phones version 3.0 and above. Up to date the application has between 150 and 200 users.
The consortium also used Youtube to share project materials (https://www.youtube.com/user/ARCADEproject2015). In January 2016 it had 20 subscribers and 1739 views. The channel hosts over 130 videos (lectures and seminars), most of which are open access.
In addition to these online approaches, the consortium, together with ARCADE HSSR promoted course materials and the project at the Global Symposium for Health Systems Research in 2014. The audience for the symposium was 1800 participants. Staff from IDS, KI, UCTH and IIHMR (along with ARCADE HSSR partners) were involved in a number of promotional activities at the HSR symposium including showcasing ARCADE courses at a stall in the Market place, demonstrating the courses available to potential users and distributing promotional flyers and business cards advertising the OCR. IDS also developed a promotional video for the ARCADE course material that was demonstrated stall at the marketplace. From the exchanges with the learners and teachers at the conferences, the freely accessible course materials available on the OCR are of great interest and potential use to the learners and universities outside of the ARCADE network, especially at universities in LMIC.
The dissemination activities at the Global Symposium on HSR 2014 also included wider communication activities and networking with similar initiatives and stakeholders. ARCADE (IDS and KI) became members of the thematic working group for Teaching and Learning in Health Systems Global that includes more than 50 researchers from Health Institutes globally actively participated in three satellite sessions/discussions at the Global Symposium on HSR 2014, and prior to that provided information to the global mapping study on innovative teaching and learning opportunities. Researchers from KI, UCTH, PHFI and IIHM presented papers and posters related to SDH research.

PHFI also conducted considerable dissemination activities during their project time, including showcasing ARCADE RSDH during a day for non-resident Indians at the Vibrant Gujarat Summit organised between 9th and 13th January 2015 in Ahmedabad, Gujarat, India. The PHFI activities as part of ARCADE RSDH were also showcased as posters during a PHFI research symposium in 2015. PHFI also held a research symposium on social determinants of health in November 2015, where the concepts of social determinants of health, scope of social determinants of health approaches and its influence on health policy in India and elsewhere were discussed. PHFI also organised a consultation called “Tribal Health: Experiences, Observations and Suggestions” in November 2015, which focused on SDH among tribal populations and was attended by a variety of actors from organisations working on tribal health.

In the final meeting in Hangzhou, China (September 2015) a policy-maker from India (invited by PHFI) took part in the review meeting and dissemination meeting.

In November 2015 IDS, Gerry Bloom, Linda Waldman and Sophie Marsden from IDS gave panel presentations for an event titled “Future of research in 21st Century - Day Three: How a shift in research practice applies in the social/digital environment” hosted by the African Universities’ Research Approaches (AURA) Programme and WHO HIFA (Healthcare Information for All 2015). All of the presentations referenced ARCADE research or products. The news story on the ARCADE website and the presentations can be viewed here – http://www.arcade-project.org/researchers-of-the-future-21st-century-approaches-for-effective-global-research/

Finally, the OCR as described in part 6, objective 3, above was key to promoting uptake of ARCADE materials both during and after the project. It is hoped that these materials live on this website or are transferred to another platform from which they can be widely accessed. IDS have also already taken steps to ensure that the learning modules and the broader lessons around developing online content for capacity development will have a life beyond the end of this project. IDS has negotiated with the University of Sussex to allow the upload of some of the learning modules it has developed under work package three to the teaching moodle- Study Direct. The Mhealth course will be run as a free blended learning module at the end of March 2016 and following feedback from students the content will be updated. This will be promoted to a wider audience as an open access resource hosted on Study Direct.

Objective 5: Develop capacity amongst partners in communications, engagement and dissemination to extend the reach of the programme

The communication plan developed for ARCADE defined key target audiences and communication activities that partner institutions could engage in for wider and more effective dissemination. The communication plan was intended to support partners in effective communications. In addition to this, a list of international conferences on SDH was created and distributed to inform partners of available dissemination activities.

Throughout the project, ARCADE partners implemented communication activities according to the communication plan agreed upon in the first period to reach key target audiences. To build further capacity among partners, a series of five webinars were conducted in partnership with FHS and CommHERE (both open for participation to ARCADE RSDH and HSSR partners, and a wider audience). The videos of these webinars are available on the ARCADE YouTube channel http://www.youtube.com/playlist?list=PLMDDXtgvPMqGBLvU6FnjcQSFEBDPAZTvU

Capacity building in communications also involved mentoring junior researchers to produce academic journal articles intended for international journals. Students were also involved in research clinic activities, which both mentored them in their research but also built their capacity in presenting their research to an international audience using online software. The project also
supported project attendance where relevant, and encouraged all partners to distribute ARCADE RSDH information at these conferences. Junior staff from PHFI, IIHMR, TJMC and SJNAHS participated in these activities.

Nine courses also provided training in the dissemination of research findings and engagement with policy-makers, providers, civil society and the general population within their learning modules. IDS have created a short learning module on how to develop a policy brief to engage with and influence a policy audience. This was a ‘hands-on’ practical skills building session for students. Delivered initially to MA students at the Institute, the content was recorded (audio and presentation slides) and adapted to suit the requirements and goals of the ARCADE RSDH programme and was uploaded onto the OCR for public consumption.

Finally, at the final meeting in Hangzhou in 2015, the project held a dissemination meeting that exposed junior researchers to presenting research findings to an audience of students, researchers and a policymaker. In addition, nine ARCADE course leaders reported that they provided training in the dissemination of research findings and engagement with policy-makers, providers, civil society and the general population within their learning modules. IDS have created a short learning module on how to develop a policy brief to engage with and influence a policy audience. This was a ‘hands-on’ practical skills building session for students. Delivered initially to MA students at the Institute, the content was recorded (audio and presentation slides) and adapted to suit the requirements and goals of the ARCADE RSDH programme and was uploaded onto the OCR for public consumption.

Objective 6: Design, launch and populate a web space for the capture of project learning and outputs

In the beginning of the project ARCADE RSDH engaged KI visual designers to develop a logo for the project and promotional materials (ARCADE pamphlet). The project’s website and content was developed and continuously updated during the project period (www.arcade-project.org). The website was updated in April 2014.

The website includes 1) project calendar 2) link to a twitter account (@ARCADEprojects, with 87 followers), 3) information about project outputs/deliverables 4) ARCADE blog 5) project publications and summaries. Since the launch of the new website there have been 13,500 page views registered that peaked around September-October 2014. This can be related to the ARCADE’s participation in the 3rd Global Symposium on Health Systems Research 2014.

The Open Course Repository (OCR), a web-based library of ARCADE’s course material (http://ocr.arcade-project.org) also contains a link to the project website, and the website has a link to OCR. The analysis of the website visits revealed that most of the websites visits are related to visits of the OCR (i.e. visitors first visited OCR, and then followed the link to the project website) that was promoted and demonstrated at the 3rd Global Health Symposium on HSR. Country-wise, most of the websites’ visits are attributed to users in India.

Website statistics
The ARCADE website had in total 5642 users with an average of 500 users per month from December 2014 up to January 15, 2016. Those users generated 23,616 page views and each user visited approximately 3 pages per visit. The average visit duration was 2 minutes. The rate of new visitors and returning visitors was very good. Out of 5642 users, 73.3% were first time visitors while 26.7% were returning users.

The ARCADE website had a global audience, with visitors coming from first Europe, followed by the Americas, Asia, Africa and Oceania. Most of the visits came from United States, Russia, India, Sweden, China, United Kingdom, Philippines, Japan and Germany. Interestingly, many of these are non-ARCADE RSDH partner countries.

The OCR, which hosted course/module materials, was also frequently visited. The website attracted 544 visitors with an average of 60 per month since its initiation. The average visit duration was 9 minutes. The bounce rate for the website was excellent since out of 100 visitors only 3 left the website after visiting only one page. The rate of new visitors and returning visitors was also very good. Out of 544 users, 56.3% were first time visitors while 43.7% were users who returned to the website after visiting it the first time. This implies that visitors returned to the site to study more or to find new material. The OCR audience was global, with most sessions initiated from Europe, Asia, Americas, Africa and Oceania. Most visitors came
from Sweden, India, United Kingdom, United States, China, Bangladesh, Finland, Australia, Uganda and Belgium. Besides websites of the consortium partners, social media, such as twitter, blog, LinkedIn, Facebook, and YouTube was used to disseminate project information and research activities. The ARCADE Twitter account has 87 followers and has tweeted 112 times. The LinkedIn group has 51 members and has generated a number of discussions. The ARCADE YouTube channel has 137 videos, 20 subscribers and in total 1.739 views. The total time spent on watching the uploaded videos has been 16.953 minutes with average view duration of 4.50 minutes. The users came from all over the world. Most (57%) of viewers were male and 43% female, and most were between 25-34 years of age. The iEcho application launched by UCTH also had a wide range of users.

Conclusion – part 6
The ARCADE RSDH consortium has been very active in producing innovative materials for disseminating project outputs. The consortium developed a wide range of materials intended for different user groups and deviated from the traditional journal format usually used in academia. Collaboration with other projects such as Future Health Systems and CommHERE succeeded in providing information to partner institutions’ students, researchers and other stakeholders about effective communications. The reach of project dissemination activities has also been wide, and the activities have a reached a global audience.

Potential Impact:
The potential impact
Even beyond the project close, ARCADE-RSDH will increase the ability of Asian institutions to produce graduates, who can support decision makers to identify and understand local problems in health inequities, and to take effective measures to reduce health inequities through actions on social determinants. This inter-university networking and collaboration will be greatly assisted by having an external, non-country based, neutral and trusted set of partners as a catalyst. In the ARCADE RSDH project, the European dimension was a great asset in establishing inter-country collaboration. The coordinated availability of senior faculty resources from several European countries (Sweden, UK, Finland) can catalyze cross Asian collaboration of Asian senior faculty, as well as junior faculty.

This project will have impacts at regional, institutional and individual levels on development of capacity in RSDH. We expect that the graduates from this programme will help to strengthen the national capacity to measure and understand the local problems; to innovate and adapt effective innovations from elsewhere to local conditions; to evaluate these innovations in pilot projects or early-stage implementations; and to widely implement the successful innovations by providing and conducting research to support decisions, especially on health systems strengthening and primary health care promotion. Strengthened research capacity of SDH can be expected to have several positive impacts on decision-making, governance, health system functioning and health; indeed, on development itself. It will be very difficult for LMICs to achieve the health MDG targets without addressing health inequities and social determinants of health. RSDH capacity is a key national asset for LMICs.

At the regional level ARCADE RSDH will seed and support a network connecting Asian institutions with, creating a shared regional collaboration infrastructure for RSDH capacity development; as well as a joint training programme connecting the these institutions, and one or more European institutions. Within the ARCADE RSDH project, the consortium was successful in submitting in excess of 42 research protocols for funding with at least two partners, 36 of which included funding for PhD students/faculty. 29 projects had at least three partner institutions, and Asian institutions led 16. The partnerships built during ARCADE RSDH are likely to continue beyond the project duration, and develop into research and teaching relationships in future. Networking and finding collaborators for the cross-country research is key to the development of new international projects. During the ARCADE RSDH, a lot of network activities happened within and beyond the consortium. For example, PHFI staff visited partners in China, Sweden and Finland in order to identify common interest and promote joint proposals development. IDS and KI also took several visits to India and China and organized network meetings for discussing collaborations and development. Other activities, like participating short-term training at other institutions, organizing ‘research clinics’, conducting joint workshops also help the network development for collaborations. ARCADE built linkages between Asian and European, and through its association with its sister project, with African universities. In addition, the
smaller projects instituted during its time linked partners also to Mexican, Brazilian, and Eastern European universities. Created connections between senior and junior researchers across universities and countries; and exposed younger researchers to international networks.

At the institutional level ARCADE RSDH strengthened hub institutions in Asia, TJMC, SJNAHS and PHFI to the point where they will develop courses covering the core modules for RSDH, a flow of students from their own countries, from neighbouring Asian countries and from European partner institutions, establishing a global brand for the ARCADE network in the area of RSDH training. This global brand and reputation will be strengthened by being the best source for RSDH course materials, many of which will be available free for download to anyone for non-profit use. During the four years of the lifecourse of the project, the consortium involving 13 partners developed 38 courses/modules. These courses are placed on institutional platforms and the open course repository, so that they can be used by future teachers and lecturers in their capacity building efforts globally. In addition to the teaching activities and the development of learning materials, the project developed capacity among lecturers and students on IT skills and using eLearning approaches. From a more wide perspective, the project contributed toward creating an agenda for eLearning at Asian partner institutions, instilling interest in the methods with deans and other senior officials.

Besides the course developing and delivering capacity, within the ARCADE RSDH project these institutions will also have strong functional offices providing support to researchers for obtaining increased numbers of grants and subsequently managing them efficiently, and managing research dissemination, an essential ability if research teams from the region are to successfully compete for international research funding, and if European based teams are to confidently administer country research grants through local institutions in Asia. The consortium held many grants management training workshops, and assisted in raising attention to the importance of efficient grants management for university systems. Formal grants management workshops were conducted at hubs in 2012 and 2014. In the third period, the consortium was particularly active in spreading knowledge about grants management activities, both through formal workshops and smaller institutional workshops.

At the individual level, doctoral and postdoctoral graduates from the ARCADE RSDH supported Asian educational institutions will have high levels of training and skills in policy oriented research networking, and will have developed during their training extensive networks with policymakers from their own countries. At the individual level it will create a flow of students at doctoral level, who more evenly reflect the gender balance of undergraduate local universities, and who graduate in courses with doctoral and post doctoral level skills in RSDH. Through formal teaching activities, the consortium reached 647 students, of whom 293 were female master’s students and 242 male master’s students. In addition, 81 female and 31 male PhD students were trained. The PhD students counted also included 4 postdoctoral fellows, two of whom were male and two female. Over 27 junior faculty members were involved in developing ARCADE course in Asian Partner institutions. ARCADE RSDH also trained students and other staff the innovative use of web technology for connecting and course delivery. Through these training approaches, the consortium has exposed students to international quality courses and topics relevant to research on SDH.

The project was very productive in involving students and postdocs in writing grants applications. Grant writing is a key skill for researchers that fosters the development of academic career. This enables capacity building young researchers, and having them interact with senior researchers. Within the ARCADE RSDH project, there are five grants writing workshops organized by different partners. In total, over 25 PhD students/ post-docs participated in mentored proposals writing during the project, and 24 mentored doctoral and post-doctoral candidates submitted research proposals. 36 of the submitted projects had funding for students/faculty (More details in D 5.2). Besides building grants writing skills for young researchers, through grants management activities conducted in ARCADE RSDH, researchers are more likely to obtain grants; increased grants give more funding to universities to train students and to obtain further grants and attract skilled individuals.

In addition, publication skills are also important for the career development of young researchers. Dr Henry Lucas and Dr Salla Atkins have mentored RSDH partners’ junior researchers in producing publications for the special issue on eLearning to be published in Global Health Action and other journals. Dr Henry Lucas and Dr Weirong Yan established a young authors’ competition, where senior staff from partner institutes could train young Chinese researchers to write international
publications. Besides these activities, several graduate students also got supervision from senior researchers at other institutions on how to write good paper through short-term visits or discussion over research clinics.

The ARCADE project also includes activities to enable career development of postdoctoral researchers. ARCADE Policy on Post-doc career development was endorsed by all the partners in November 2013 (described in Deliverable 6.2). A job section was created at ARCADE project website, where the job announcements for Post-doc and PhD positions are updated weekly. The webpage also provides the links to the career sections of the partners’ institutions webpages and jobs announcements. To-date 14 young researchers/post docs were employed at Asian partner institutions, and 11 PhD students are supported through ARCADE-linked grants.

Main dissemination activities

The ARCADE RSDH project developed close relationships with other projects during its duration, most notably ARCADE HSSR, which expanded collaborations and materials to Africa; The Research Links collaboration project, coordinated by KI, which has partners in Latin America (Brazil, Mexico) and Eastern Europe (Ukraine, Moldova); and SECTOR EE (Supporting evidence-based policymaking through health research in Eastern Europe), which furthered links in Eastern Europe (Ukraine, Moldova, Poland). In addition to these projects, ARCADE RSDH linked with other EU projects focusing on capacity building, such as Africa BUILD; INTREC; CHEPSAA; and CAAST-net. Through home university networks and projects, staff and students could also engage with RSDH while working on other projects, notably so Future Health Systems; SurMEPI; and others.

The ARCADE RSDH consortium used a number of innovative channels to engage with the public, policymakers and academics during the project period. Over 130 dissemination activities were recorded at an institutional, national and international level. These included website communications and social media communications, pamphlets, presentations, and even a mobile application.

In addition to the various media used and various audiences approached, the consortium has also prepared 16 publications during the project period. Table 1.4.1 below details the publications submitted, accepted and published that originate within ARCADE RSDH work.

No. Title/DOT Main author Title of the periodical or the series Number, date or frequency

1 "Lessons learned from implementing IT based education in resource-constrained countries" Manu Gupta, Sophie Marsden, Tony Oluka, Reetu Sharma, Henry Lucas The Internet and Higher Education Submitted

2 A book chapter entitled as “Building sustainable capacity in health research through elearning in resource constrained countries” Manu Gupta The chapter has been submitted in an upcoming book “Revolutionizing Modern Education through Meaningful E-Learning Implementation” by Badrul Khan” by Badrul Khan Accepted

3 What can India learn from China’s healthcare system? Prof. Dileep Mavalankar, Prof. Jay Satia Indian Express Healthcare 20-May-15


5 The project about Producing Well-trained Doctors and Post-docs for Research on Social Determinants of Health Research. DOI: 10.3969/j.issn.1673-5625.2014.02.006 Wu X, Peng Y, Yan WR Chinese Journal of Social Medicine VOL.31/2


8 Application of Moodle Interactive Platform in the Teaching of Epidemiology. DOI: 10.3969/j.issn.1673-5625.2014.05.006 Peng Y, Wu X, Zhan XX, Yan WR. Chinese Journal of Social Medicine VOL.31/5
In total, 14 academic book chapters, articles were produced during the project, and one newspaper article was published in India. During their visit to Finland, PHFI together with UTA and KI representatives also gave an interview about the project to a freelance journalist. Further detail on dissemination activities is given in section 2 of this report.

List of Websites:
Address of the project public website: http://www.arcade-project.org/


Contact Details

Principal investigator:
Professor Vinod Diwan
Principal investigator
vinod.diwan@ki.se

For general queries:
Dr Salla Atkins
Scientific Coordinator
Email: salla.atkins [at] ki.se
Tel: +358 45 353 0605

For technical queries:
Elnta Meragia
Research Assistant
Email: elnta.meragia [at] ki.se
Tel: +46 72 051 39 90