

Figure 1-

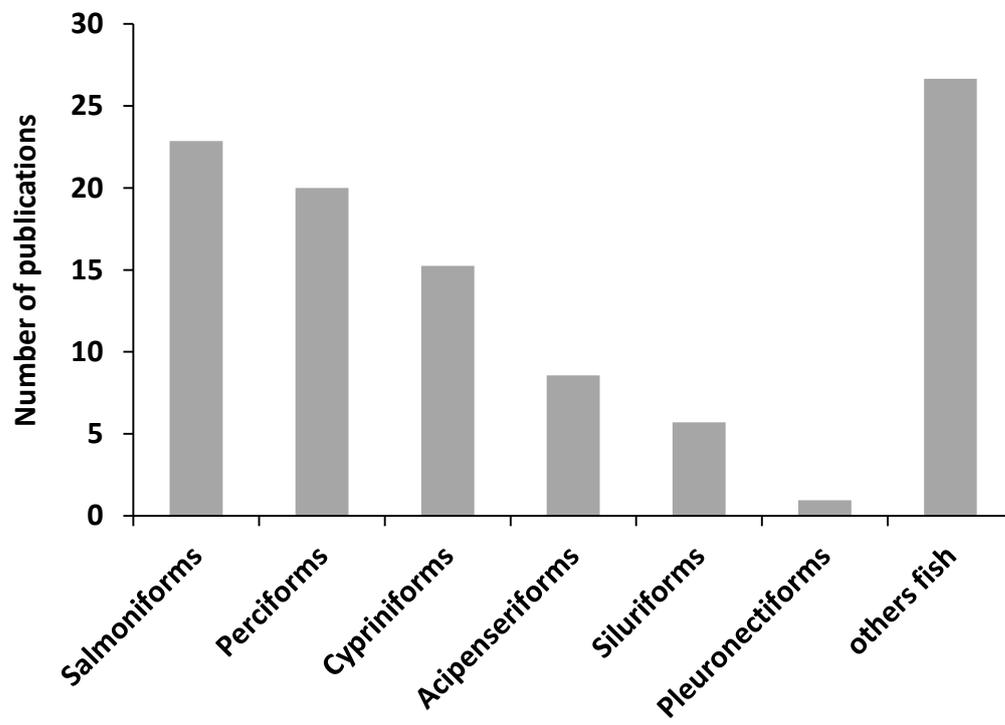


Figure 2

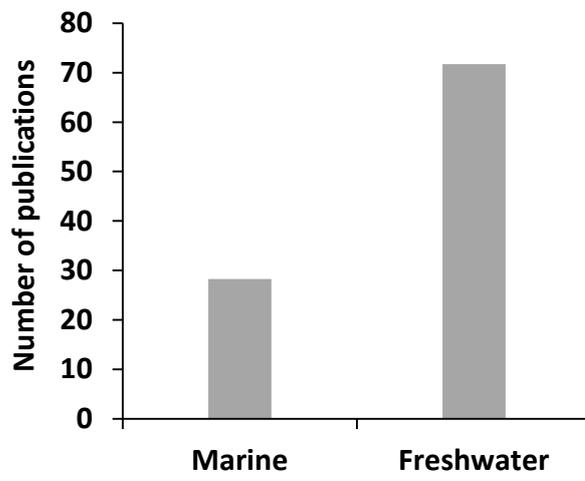


Figure 3

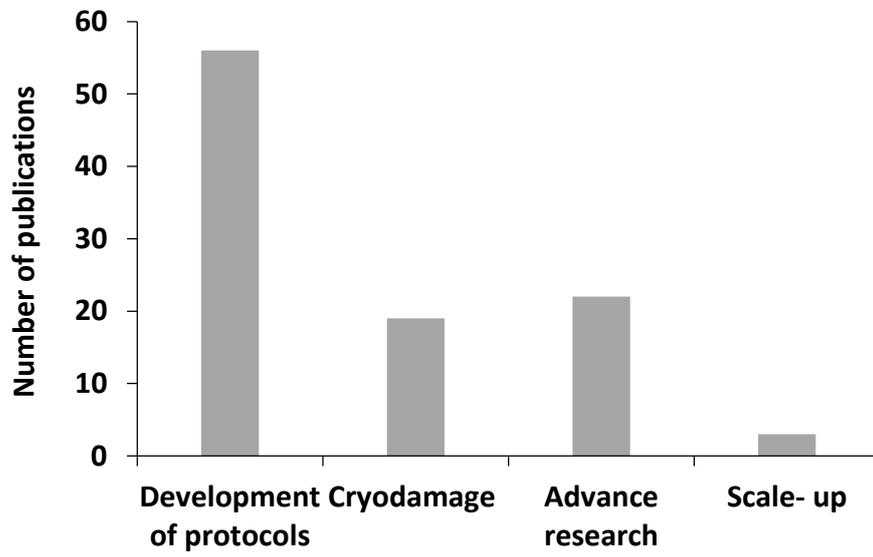


Figure 4-

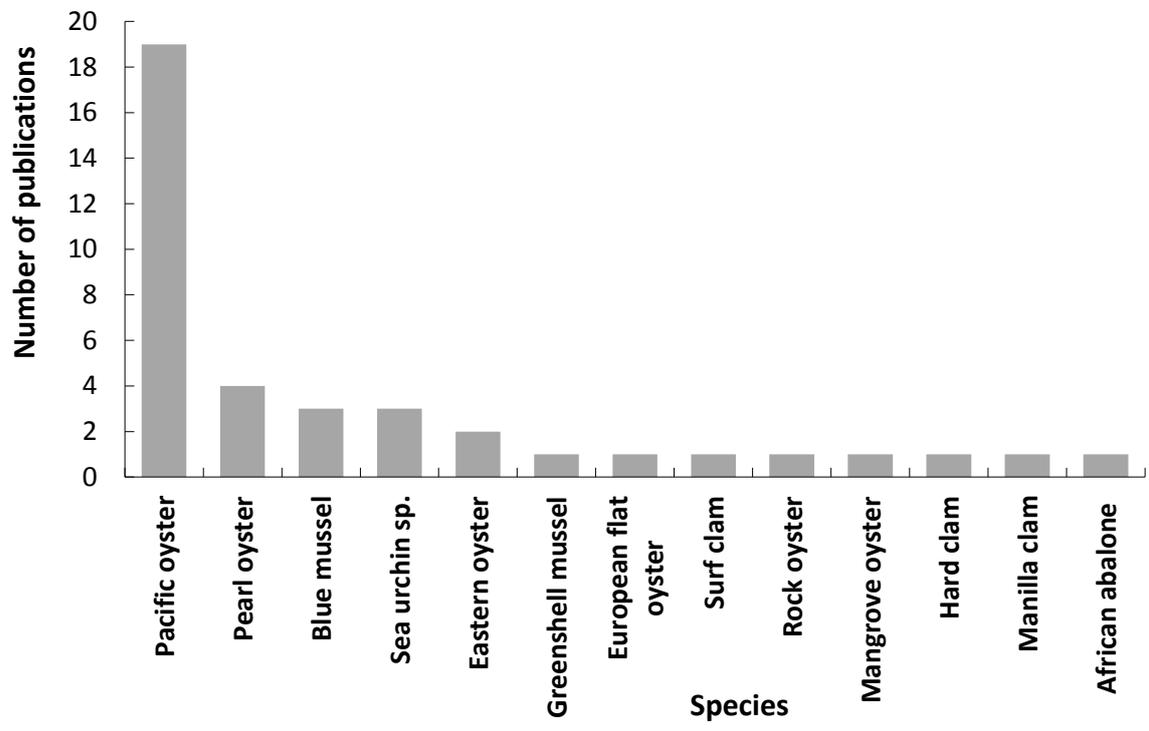


Table 1-

Action	Purpose
Development of the technical capabilities, and establishment of standardized and streamlined procedures.	High-throughput processing and reliable quality control of samples.
Development of equipment, devices and facilities.	Automated handling of small sample volumes.
Establishment of quality control protocols and standardization or harmonization of protocols, labelling, terminology and reporting of results.	Establish databases, development of best practices manuals or other guidelines.
Development of central facilities that have strong operational capabilities.	Develop cooperation with other organizations and facilities. These relationships can include sharing of samples, capabilities and expertise.
Establishment of training programs.	Education of personnel from different user laboratories for procedural efficiency.
Development of appropriate biosecurity safeguards.	Control movement of pathogens in and out of facilities and other adverse biological effects.
Development of functioning storage repositories.	Provide rules for use and disposal of samples with appropriate security and backup for basic services.
Implementation of archival-quality labelling and creation of robust databases.	Handling biological information and maintaining inventory and identification of sample locations.
Integration of sperm repository databases	Exchange information with existing databases for biological and genetic information of strains or lines.

Table 2-

Scientific name	Common name	Marine/Freshwater	References
<i>Scophthalmus maximus</i>	turbot	marine	Cabrita et al., 2003; Robles et al., 2003b
<i>Paralichthys olivaceus</i>	olive flounder	marine	Chen and Tian 2005; Edashige et al., 2006; Zhang et al., 2005b
<i>Pagrus major</i>	red sea bream	marine	Ding et al., 2007
<i>Sillago japonica</i>	Japanese sillago	marine	Rahman et al., 2011
<i>Sparus aurata</i>	gilthead seabream	marine	Robles et al., 2007
<i>Pseudopleuronectes americanus</i>	winter flounder	marine	Robles et al., 2005
<i>Labeo rohita</i>	Indian carp	freshwater	Ahammad et al., 2003
<i>Cyprinus carpio</i>	common carp	freshwater	Dinnyes et al., 1998
<i>Tinca tinca</i>	tench	freshwater	El-Battawy and Linhart 2009
<i>Rhinelepis aspera</i>	acarí	freshwater	Fornari et al., 2014
<i>Piaractus mesopotamicus</i>	pacu	freshwater	Neves et al., 2014
<i>Piaractus brachipomus</i>	pacu blanco	freshwater	Pessoa et al., 2014
<i>Oryzias latipes</i>	medaka	freshwater	Valdez et al., 2005; Zhang et al., 2012
<i>Misgurnus anguillicaudatus</i>	oriental weatherfish	freshwater	Yasui et al., 2011
<i>Danio rerio</i>	zebrafish	freshwater	Desai et al., 2011; Lahnsteiner 2008; Liu et al., 2001b; Martínez-Páramo et al., 2009a; Robles et al., 2004

Table 3-

Name (country)	Purpose	Species	Type of frozen collection	Specificity	Costs coverage	Internet site or contact
Cryobank of the National Academy of Science (Ukraine)	Conservation Restoration Breeders	Wild fish: Carps, trouts sturgeons, many rare species	Sperm	First fish sperm bank in Europe, sperm from extinct lines	Public funding	ekopeik@yahoo.com (Dr Evgeniy Kopeika)
Frozen Ark (UK)	Conservation	Wild fish from 112 UK species	Tissues, DNA, cells, blood	Preservation of biological knowledge	Public funding (Consortium)	www.frozenark.org
Cryo-Brehm (Germany)	Conservation Research	All wild animals, more than 20 fish species	Tissues, DNA, cells, cell lines, blood (sperm)	Member of the Frozen Ark consortium Cell line provider for research	Public funding (Franhofer Inst.)	www.cryobrehm.de phillip.ciba@emb.fraunhofer.de
RIFCH Bank (Czech Republic)	Conservation Breeders	Farmed fish : 7 FW species, including 11 carp breeds	Sperm	Part of National Program for Conservation of FAGR (CZR)	Public funding	flajshans@frov.jcu.cz (Prof Ing Martin Flajshans)
CryoAqua (France)	Conservation Breeders	Farmed resources: Trout, oyster	Sperm	Both private storage / French National Cryobank (CRB- Anim)	Fees (private storage) / Public funding (conservation)	laboproduction35@evolutive.fr / www.cryobanque.org www.crb-anim.fr clabbe@rennes.inra.fr

EZRC (Germany)	Research (EU)	Zebrafish	Sperm	Transgenic lines provider	Fee to get back the line	www.ezrc.kit.edu
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We apologize to the banks which were not included because we failed to know them. We encourage them to contact the authors of this chapter (TZ and CL).

Frozen Ark: International consortium

FW: fresh water

RIFCH: Research Institute of Fish Culture and Hydrobiology (CZR)

FARG: Farmed animal genetic resources

EZRC: European zebrafish resource center