



SYNTHETIC ICE RINKS ***SUPPORT, IDEAS & SOLUTIONS***

IIHF MISSION & VISION



Actual ICE26 IIHF Strategy 2022–2026

VISION Global leader in winter sports

MISSION To work with all stakeholders to make ice hockey an accessible, attractive and competitive sport and to generate added-value for our members

INNOVATE Strengthen IIHF's global presence.
Drive new sustainable initiatives to reduce the sport's environmental footprint and increase its inclusivity

EXPAND Build a targeted development program.
Establish a new 3-on-3 discipline that provides competitive opportunities for developing ice hockey nations

QUESTIONS TO OURSELVES

ICE26 IIHF Strategy 2022–2026

- What is the potential of the IIHF in the World?
- What Problems & Challenges do we face in Hockey Development?
- How can we help the IIHF to spread the Hockey around the World?
- What solutions and ideas can we implement for Hockey Development?
- What we should to do right now?

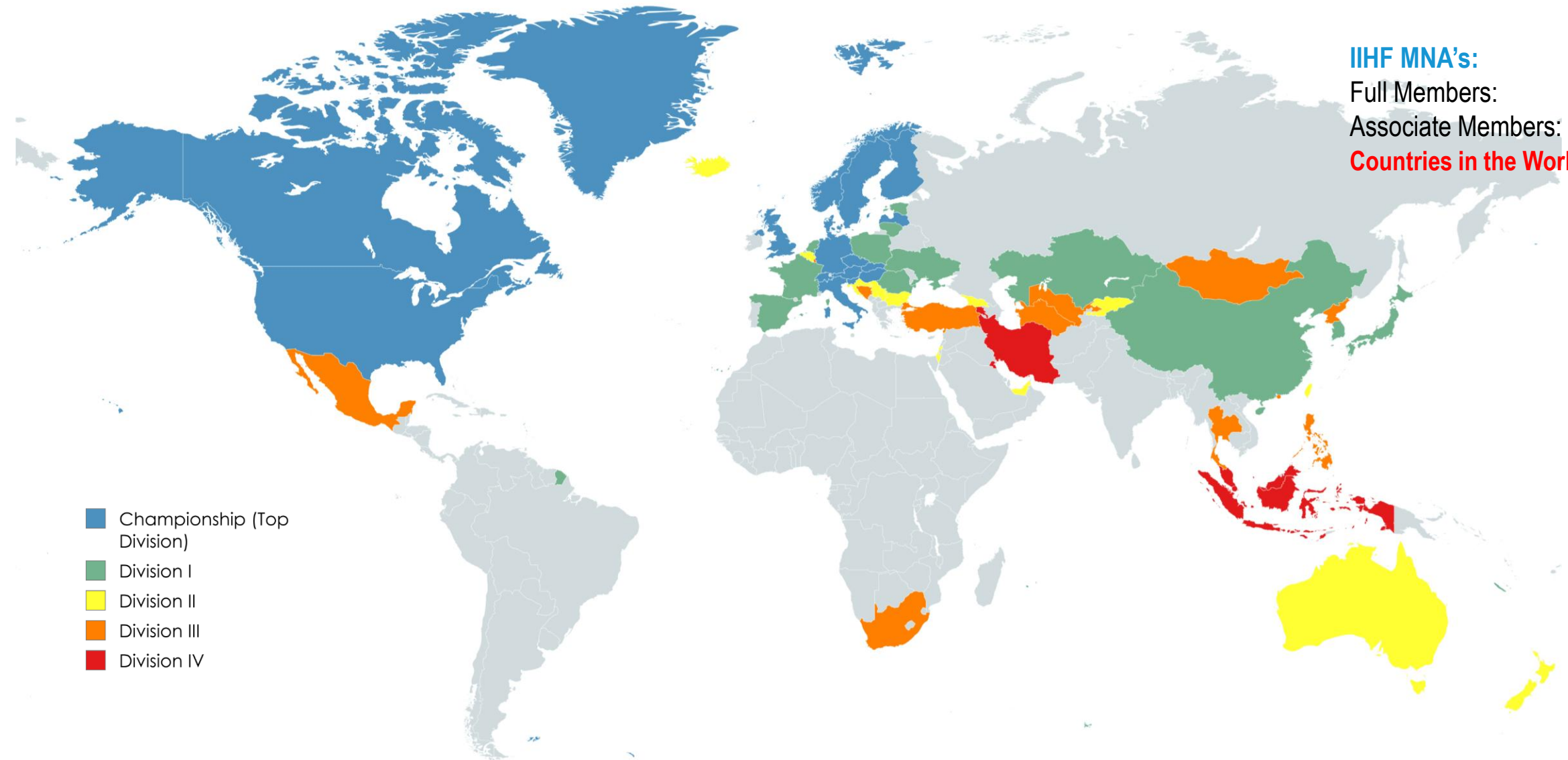


GLOBAL HOCKEY POTENTIAL

WORLD HOCKEY TODAY

- Championship (Top Division)
- Division I
- Division II
- Division III
- Division IV

IIHF MNA's: 84
Full Members: 61
Associate Members: 23
Countries in the World: 195



EUROPE HOCKEY



Member National Associations: 41
 Full Members: 34
 Associate Members: 7
Total Countries in Europe: 50
POTENTIAL: 9

Europe: Votes: Council: MNA:

Western:			
Austria	2		
Belgium	2		
France	2	1	
Germany	2	1	
Great Britain	2		
Ireland	2		
Liechtenstein	-		yes
Luxemburg	2		
Monaco	-		no
Netherlands	2		
Switzerland	2	1	

Eastern:			
Belarus	2		
Czech Republic	2	1	
Hungary	2	1	
Moldova	-		no
Poland	2	1	
Russia	2	1	
Slovakia	2		
Ukraine	2		

Northern:			
Denmark	2	1	
Estonia	2		
Finland	2	1	
Iceland	2		
Latvia	2	1	
Lithuania	2		
Norway	2		
Sweden	2	1	

Southern:			
Andorra	-		yes
Italy	2	1	
Malta	-		no
Portugal	-		yes
San Marino	-		no
Spain	2		
Armenia	-		yes
Azerbaijan	-		yes
Cyprus	-		no
Georgia	2		
Turkey	2		

Balkans:			
Albania	-		no
Bosnia & Herzegovina	2		
Bulgaria	2		
Croatia	2		
Greece	-		yes
Montenegro	-		no
North Macedonia	-		yes
Romania	2		
Serbia	2		
Slovenia	2		

Partially Recog.:			
Kosovo	-		no
Transnistria	-		no

Total (50): 68 12 7 / 9

Population: ~ 752 million

ASIA HOCKEY



Member National Associations: 27
Full Members: 20
Associate Members: 7
Total Countries in Asia: 47
POTENTIAL: 20

Asia: Votes: Council: MNA:

Western:	Bahrain	-	no
	Iran	2	
	Iraq	-	no
	Israel	2	
	Jordan	-	no
	Kuwait	2	
	Lebanon	-	yes
	Oman	-	yes
	Qatar	-	yes
	Saudi Arabia	-	no
	Syria	-	no
	UAE	2	
	Yemen	-	no

Central:	Kazakhstan	2	
	Kyrgyzstan	2	1
	Tajikistan	-	no
	Turkmenistan	2	
	Uzbekistan	1	

Southern:	Afghanistan	-	no
	Bangladesh	-	no
	Bhutan	-	no
	India	1	
	Maldives	-	no
	Nepal	-	yes
	Pakistan	-	no
	Shri Lanka	-	no

Eastern:	China	2	
	DPR Korea	2	
	Japan	2	
	Korea	2	
	Mongolia	1	

South-East:	Brunei	-	no
	Cambodia	-	yes
	East Timor	-	no
	Indonesia	-	yes
	Laos	-	no
	Malaysia	1	
	Minyama	-	no
	Philippines	1	
	Singapore	1	
	Thailand	2	
	Vietnam	-	no

Partially Recog.:	Chinese Taipei	2	
	Northern Cyprus	-	no
	Palestine	-	no

Depended States	Hong-Kong	2	
	Macao	-	yes

Total (47): 34 1 7 / 20

Population: ~ 4,893 million

AMERICA & OCEANIA HOCKEY



America: Votes: Council: MNA:

North:	Bahamas Islands	-		no
	Canada	2	1	
	Cuba	-		no
	Dominicana	-		no
	Haiti	-		no
	Honduras	-		no
	Jamaica	-		yes
	Mexico	2		
	Nicaragua	-		no
	USA	2		

Central:	Costa Rica	-		no
	Guatemala	-		no
	Panama	-		no
	Salvador	-		no
	Trinidad & Tobago	-		no

Member National Associations: 8

Member National Associations: 2

Full Members: 5

Associate Members: 5

Total Countries: 34

POTENTIAL: 24

South:	Argentina	-		yes
	Bolivia	-		no
	Brazil	-		yes
	Chile	-		yes
	Colombia	-		yes
	Ecuador	-		no
	Gayana	-		no
	Paraguay	-		no
	Peru	-		no
	Surinam	-		no
	Uruguay	-		no
	Venezuela	-		no

Depended States:	Guadalupe	-		no
	Puerto Rico	-		no
	Greenland	-		no

Total (30): 6 1 5 / 22

Oceania: Votes: Council: MNA:

	Australia	2		
	New Zealand	2		
	New Guinea	-		no
	Hawaii	-		no

Total (4): 4 0 0 / 2

Population: ~ 1,119 million

AFRICA HOCKEY



Member National Associations: 4
Full Members: 1
Associate Members: 3
Total Countries in Africa: 54
POTENTIAL: 50

Africa:		Votes:	Council:	MNA:
Arabian:	Algeria	-		yes
	Comoros	-		no
	Djibouti	-		no
	Egypt	-		no
	Libya	-		no
	Mauritania	-		no
	Morocco	-		yes
	RASD	-		no
	Somali	-		no
	Sudan	-		no
	Tunisia	-		yes
	Chad	-		no
	Etheria	-		no
French:	Benin	-		no
	Burkina Faso	-		no
	Burundi	-		no
	Congo	-		no
	Cote d'Ivoire	-		no
	Gabon	-		no
	Guinea	-		no
	Guinea Equatorial	-		no
	Madagascar	-		no
	Mali	-		no
	Mayotte	-		no
	Niger	-		no
	Renyon	-		no
	RSA	-		no
	Rwanda	-		no
	Senegal	-		no
	Togo	-		no

Portuguese:	Angola	-	no
	Cabo Verde	-	no
	Guinee-Bissau	-	no
	Madeira	-	no
	Mauritius	-	no
	Mozambique	-	no
	Sao Tome and Principe	-	no

English:	Botswana	-	no
	Cameroon	-	no
	Eswatini	-	no
	FRA	-	no
	Gambia	-	no
	Ghana	-	no
	Kenia	-	no
	Lesotho	-	no
	Liberia	-	no
	Malawi	-	no
	Namibia	-	no
	Nigeria	-	no
	RSA	2	
	Sierra Leone	-	no
	South Sudan	-	no
	Uganda	-	no
	Zambia	-	no

Total (54): 2 0 3 / 51

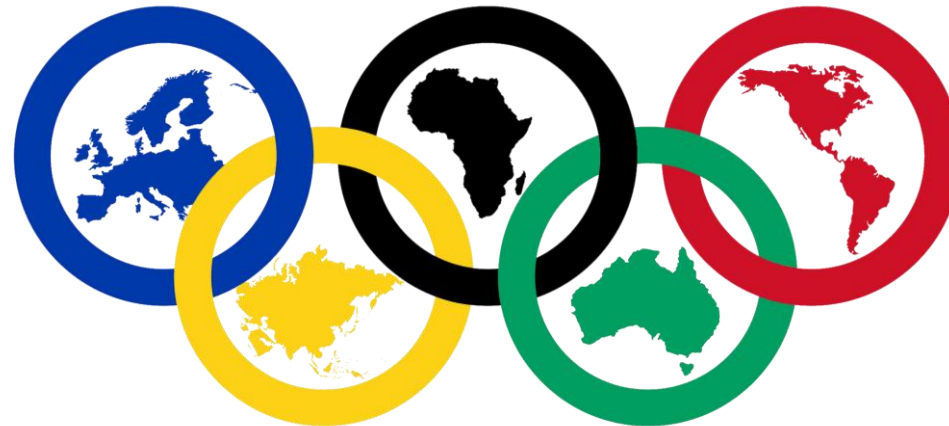
Population: ~ 1,504 million

POPULATION ENGAGING

Total Countries in Europe: 50
Member National Associations: 41
FIN (11,8 players / 1000): 1,18%
SWE (7,3 players / 1000): 0,73%
LAT (4,3 players / 1000): 0,43%
SUI (3,7 players / 1000): 0,37%
CZE (2,5 players / 1000): 0,25%
> 0,20 %: 4
> 0,10 %: 32
- No Hockey 9

Total Countries in Asia: 47
Member National Associations: 27
KAZ (0,7 players / 1000): 0,07%
KGZ (0,4 players / 1000): 0,04%
JPN / KOR (0,1 players / 1000): 0,01%
> 0,01 %: 22
- No Hockey 20

Total Countries in Africa: 54
Member National Associations: 4
RSA (0,01 players / 1000): 0,00%
> 0,00 %: 3
- No Hockey 50



Total Countries in Americas: 30
Member National Associations: 8
CAN (15,4 players / 1000): 1,54%
USA (1,7 players / 1000): 0,17%
> 0,10 %: 6
- No Hockey 22

Total Countries in Oceania: 4
Member National Associations: 2
NZL (0,5 players / 1000): 0,05%
AUS (0,2 players / 1000): 0,02%
- No Hockey 2



ICE HOCKEY CHALLENGES

FACILITY PROBLEMS

CONSTRUCTION



- **CONSTRUCTION COSTS** - High & ever-increasing cost of construction, building materials
- **MULTIFUNCTIONALITY** - Complex reorientation of the facility (ice) to other sports and events
- **REPAIR & SERVICE** - Such buildings require additional costs for repair and maintenance

MAINTENANCE



- **ENERGY SUPPORT (24/7)** - Average energy consumption of 200-280 households, and from 11,500 kW to 25,200 kW
- **WATER CONSUMPTION** - High consumption of multi-level purified water from 10,000 L to 30,000 L
- **GASOIL & EMISSIONS** - Consuming 9,500 L to 15,500 L of Gasoil, emissions are generated 4,75–8,55 Tons CO²

CLIMATE INFLUENCE



- **SUSTAINABILITY CASE** - Ice rinks face a growing sustainability problem. Water deficit threatens operations in many regions. The enormous energy required for refrigeration drives up costs and environmental impact. We have around 13'000 outdoor rinks worldwide on the line. 40 - 50% of them was built in the 70 - 80ties, and around 5'372 of them in North America, and around 6'200 in Russia

ACCESSIBILITY



- ICE COST -

Because of high cost of maintaining the arena and ice many people can't afford to send their children to training

- EQUIPMENT COST -

Limited number of companies producing equipment, as well as the low interest in hockey in the world, does not provide a larger market for equipment to reduce its price and make it accessible for kids & parents

GAME INTEREST



- iPHONE GENERATION -

Over the last 15 years there has been a huge leap of Digital TV in Smart TV & App TV, and less spectators in Arenas so

- 3x3 & PHYGITAL HOCKEY -

The consumers and spectators market demands new, more intense and shorter formats. Reinstalling standard rinks to smaller sizes or another formats requires more time, re-icing and resources

COUNTRY CONDITIONS



- LANDFORMS DIVERSITY -

There are 12 Natural Zones from the Arctic Desert to Tropical Forests in the World

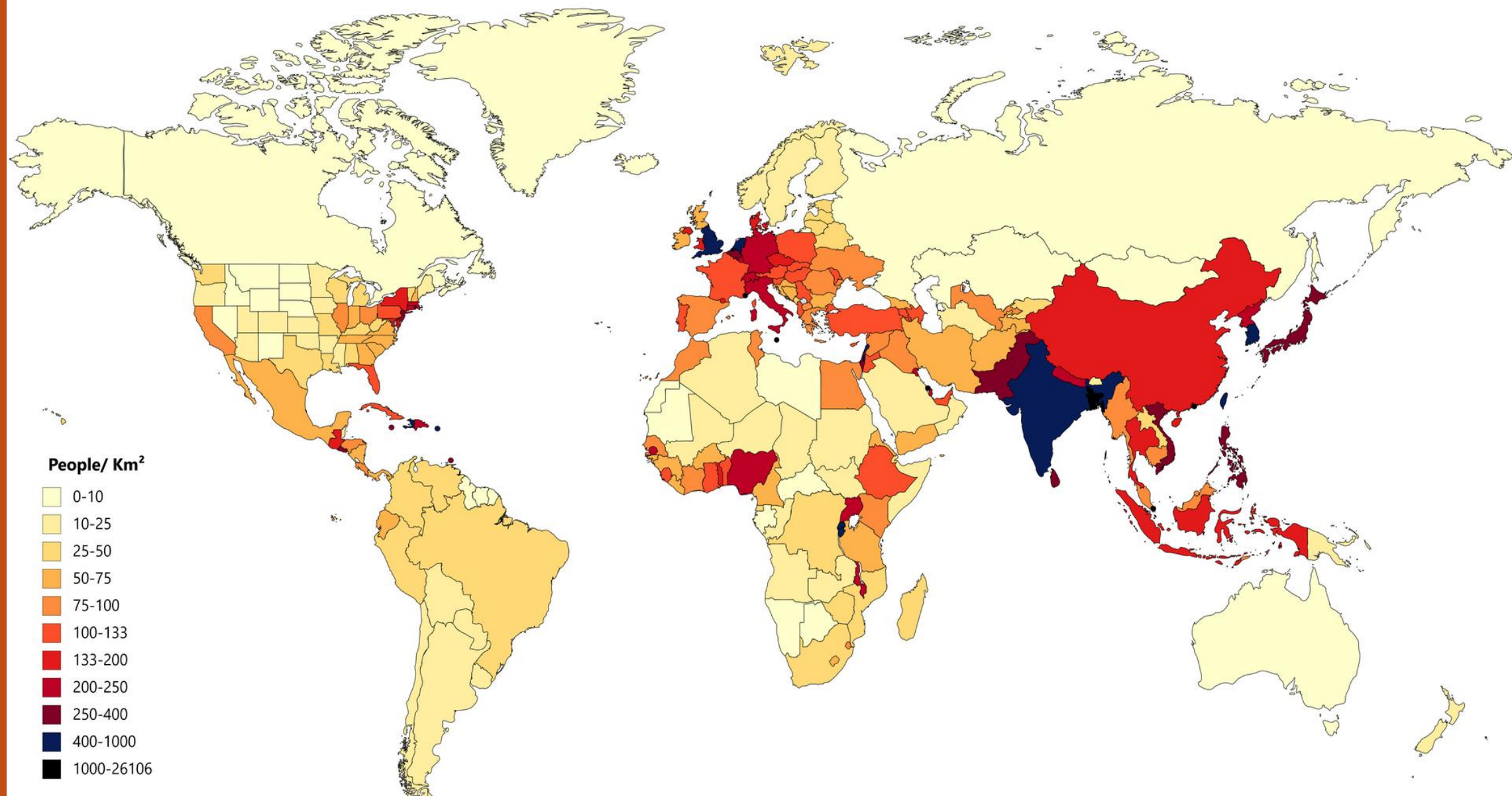
- POPULATION DENSITY -

Many countries in the tropical and equatorial zones have a very high population density with a small country area

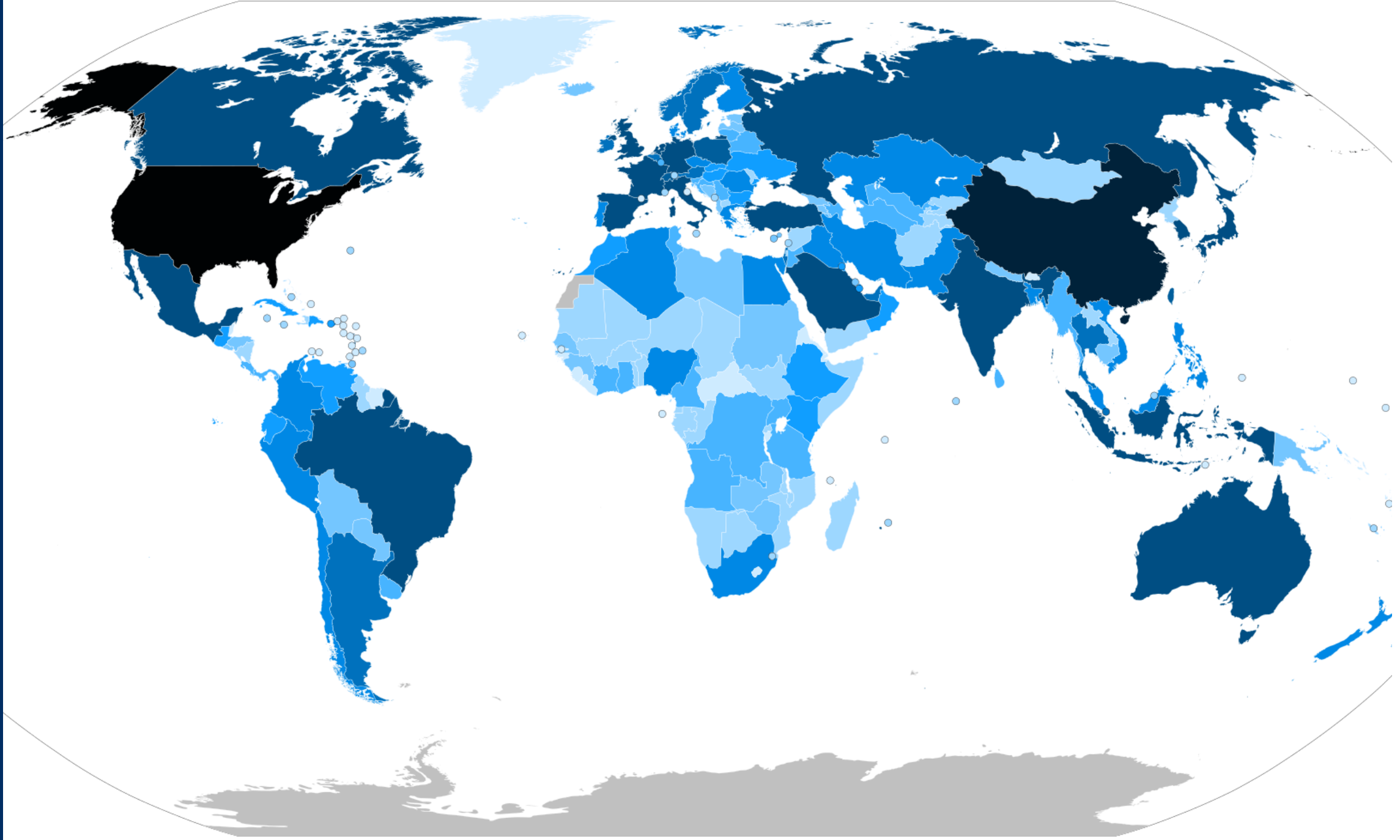
- INCOME LEVEL -

The income level of people in the World is decreasing by year

POPULATION DENSITY



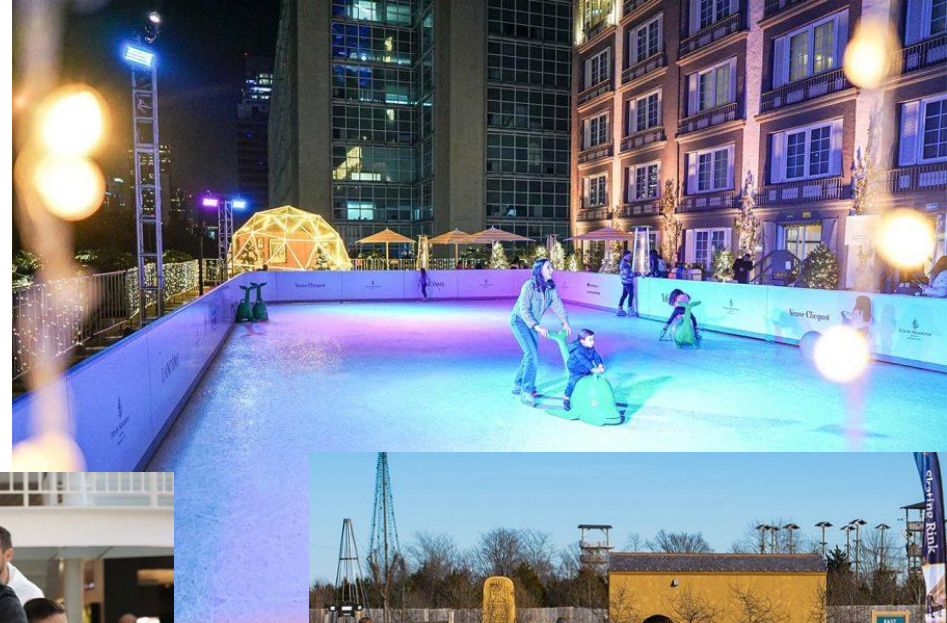
WORLD GDP (INCOME)



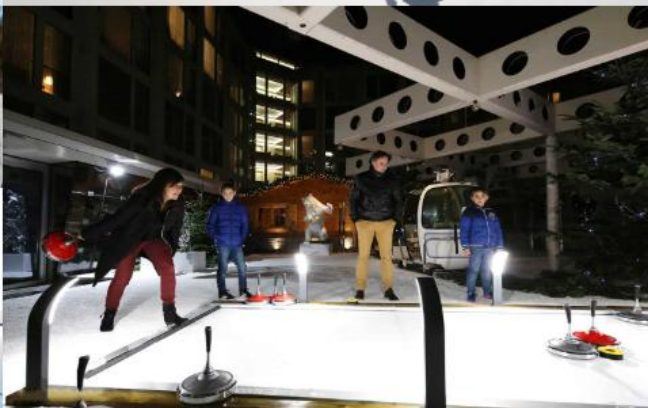


SOLUTION = EVOLUTION = REVOLUTION

Synthetic Ice – Game Changing New Hockey Technologies to Grow the Game



SYNTHETIC ECO ERA



- ✓ Events
- ✓ Hotels
- ✓ Indoor
- ✓ Malls

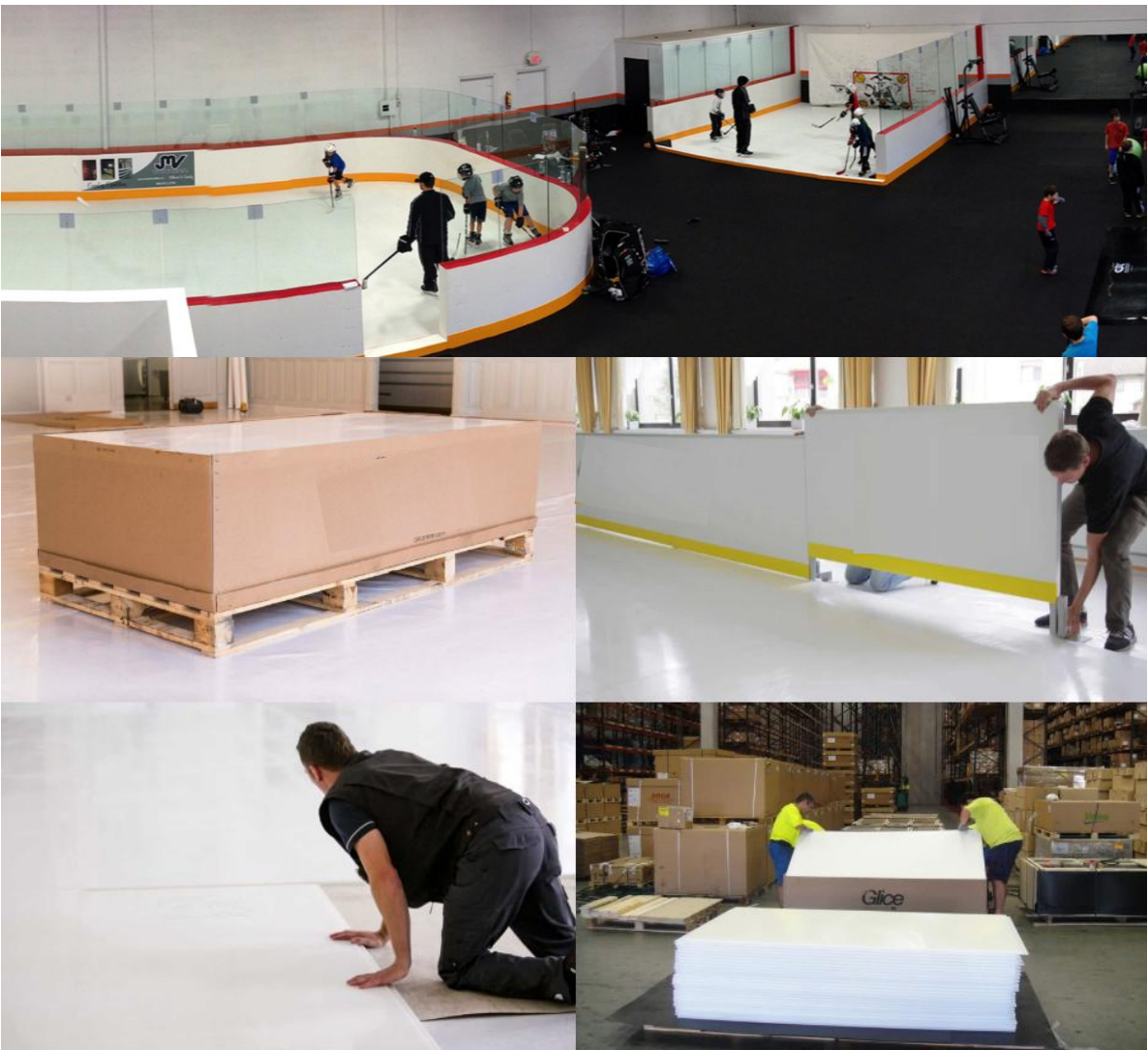
✓ Any Building, Any Space & Any Room, Any Country

- ✓ Outdoor
- ✓ Facilities
- ✓ Car Parking
- ✓ Municipalities

SKATE ANYWHERE ANYTIME & ALWAYS



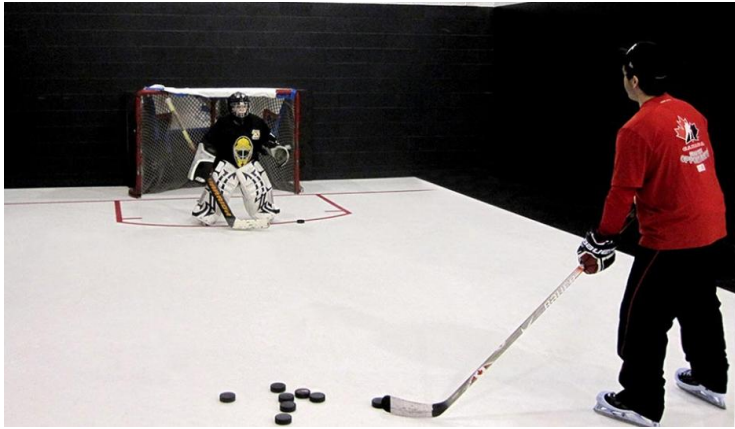
ANY SPORT – ANY SIZE – ANYTIME



ARTIFICIAL ICE RINK	vs	SYNTHETIC ICE RINK
25.200 Kw 30.000 L. water 15.375 L. gasoil 8,5 T CO2		0 Kw 0 L. water 0 L. gasoil 0 T CO2
Leaking gas and/or glycol.		Water, gas, or glycol are not necessary.
Noise pollution.		No energy required.
Associated risks of heavy machinery (e.g. explosions).		No machinery required.
Frequent injuries.		Synthetic ice is softer, absorbing the fall, less injuries.
Installation: 5-6 days.		Installation: 1 day.

Energy consumption comparison of a 1 (one) month 3,250sqft / 300m2 Conventional Ice Rink compared to Synthetic Ice Rink.

SYNTHETIC ICE RINKS PROS



Optimal grip and glide ratio – great agility



Reduced frequency of blade sharpening



Quick to install



Light weight, easy handling



Robust and all weatherproof



Reduced ice shavings and blade abrasion



Self-lubricating. No glide enhancers required

SYNTHETIC TECHNOLOGIES

10mm / 0.4" thick (600 x 600 mm /
1' 96" x 1' 96")

Max rink size 50 m² / 500 ft²



20mm / 0.75" thick (1965 x 982.5
mm / 6' 44" x 3' 22")

Max rink size ∞



13mm / 0.5" thick (1965 x 982.5 mm
/ 6' 44" x 3' 22")

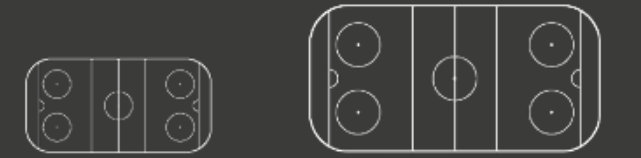
Max rink size 100 m² / 1000 ft²



Weight 3 kg
Warranty 5 Years
Lifespan 10 Years

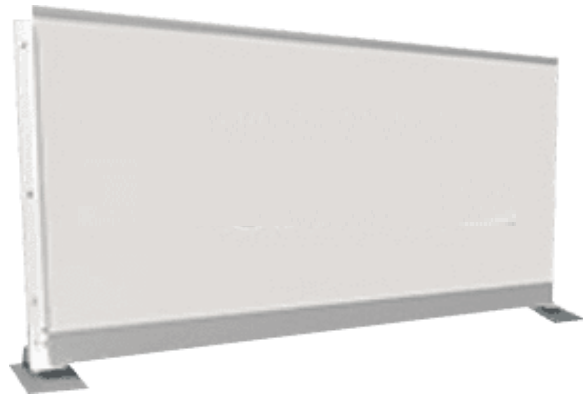
Weight 37 kg
Warranty 12 Years
Lifespan 20 Years

Weight 24 kg
Warranty 6 Years
Lifespan 12 Years



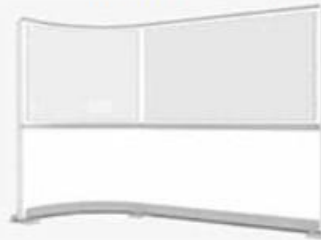
4m² - 1800m²

43ft² - 19,375ft²



Public Protection Polycarbonate

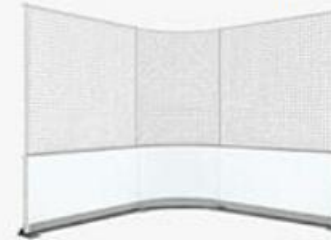
1010 mm (3' 3") tall



for indoor and outdoor use

Public Protection Nets

1040 mm (3' 4") tall



for indoor and outdoor use

Hockey Dasher Board System

Height: 1.1m / 3' 6"

Corner radius: 3m / 9' 8"



SYNTHETIC TECHNOLOGIES

- SHARKBLADES -

New skate's blade technology by GreenHockey



- BLACK GHOST CARBON BLADE -

NHL Licensed Performance Equipment



BLADES FOR SYNTHETICS



- Installation on almost any surface
- Almost any size and configuration
- Outdoor temperatures - 40C / +40C

Environmentally-friendly and 100% recyclable technology



OUTDOOR ECO RINKS & FACILITIES

NET ZERO ARENA – it's renewable energy,
reduce emissions and enhance cost-efficiency

Finished practices or games –
turned off the switch and go home



Just imagine that to keep such a Rink running (lights and air conditioners) you only need to install solar panels on the roof of the rink



INDOOR ECO RINKS & FACILITIES



<https://xtraice.com>



<https://roechling.com>



<https://multiarena.no>



<https://unrealicerinks.com>



<https://polyglidesyntheticice.com>



<https://green.hockey>



<https://icefloor365.com>



<https://icerinkpanel.com>



<https://smartrink.com>



<https://glicerink.com>



<https://jinhang-uhmw.com>



<https://smartice.ch>



<https://kwikrinksyntheticice.com>



<https://synthetic-ice-rinks.com>



<https://ironsleek.com>



<https://syntheticicesolutions.com>

WORLDWIDE PRODUCT MARKET



NEW TIME =
OPPORTUNITIES



3 x 3
WORLDWIDE

PHYGITAL
HOCKEY

NEW FUTURE
FORMATS



NEW HOCKEY FORMATS



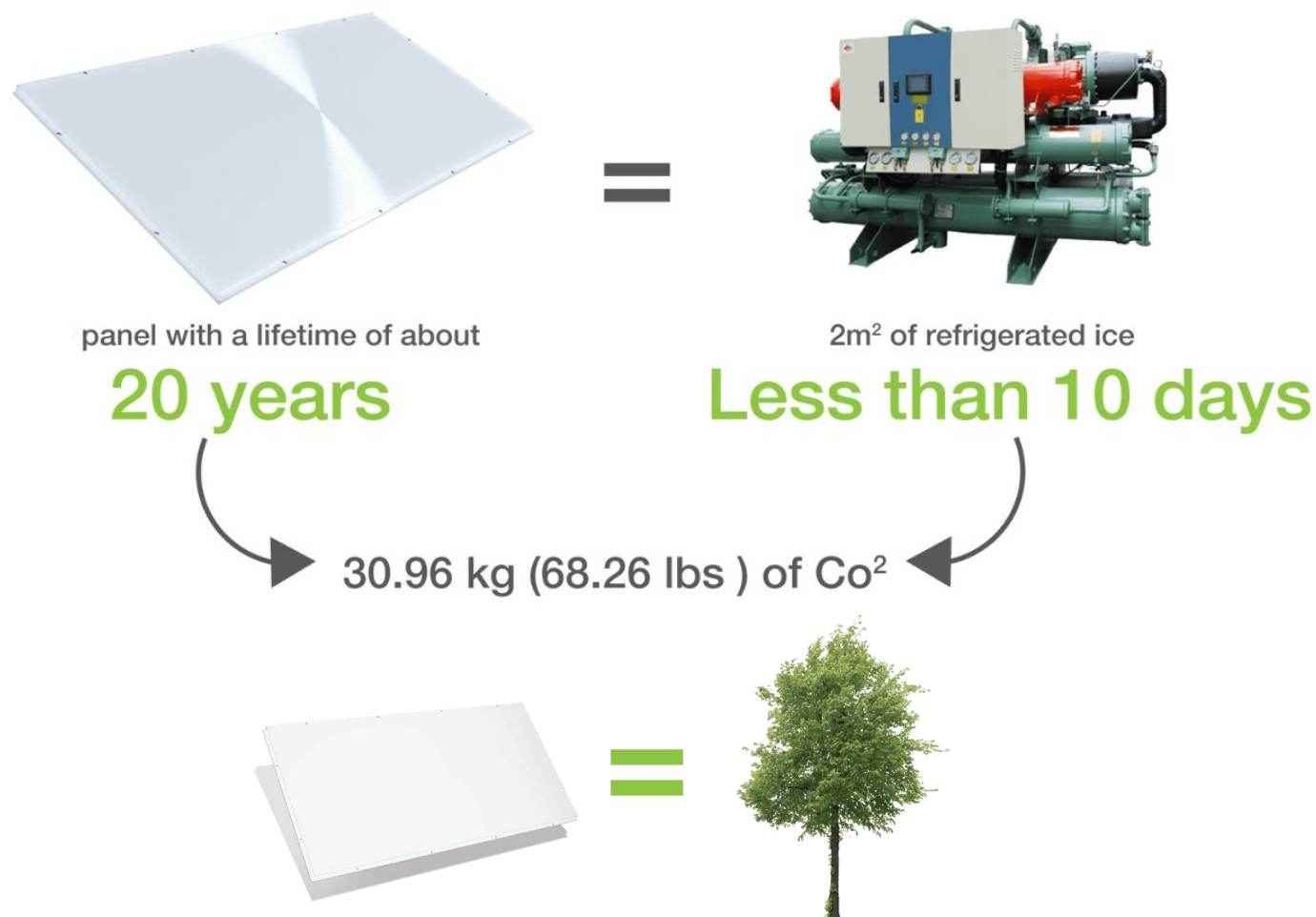
ICE Evolution – ECO Revolution

ECO-Rinks employ a sustainable skating technology that requires NO water, NO energy or NO carbon emissions.

Depending on the material, the CO² emissions of artificial ice rink manufacturing are many times higher.

The production of an aluminum refrigeration system needs about 280 times more energy than the production of a Synthetic Ice surface of the same size.

Very complex and expensive chillers have to be produced to cool these rinks.





**Energy
Saving**



**Electricity
Saving**



Energy and Co²

Each square meter of artificial ice consumes up to 840 kWh per year, produces average CO² emissions of 285 kg (628 lbs), depending on the type of energy.

In contrast, Synthetic Ice does not require electricity and leaves no carbon footprint.



Microplastics are tiny pieces of broken-down plastic that can eventually end up in the ocean. Major sources include textiles, tires, and the soles of shoes. New modern technologies minimizes the amount of abrasion caused from skates.



Water

A refrigerated ice rink requires an average of up to 50 liters (13.2 gallons) of water per square meter.

In comparison, Synthetic Ice requires no water.



Coolant

An artificial refrigerated ice rink requires approximately 1.8 liters (0.48 gallons) of coolant per square meter and refrigerants often contain chemical contaminants.

Synthetic Ice is operated without refrigerants.



“ Our Mission 26 – is to build 26 artificial ice rinks partly from ocean plastic. In doing so, we will remove around 300 tons of plastic out of the ocean. Moreover, we save around 512 tons of CO₂ with each full-size rink (1800 sqm).”

“This groundbreaking initiative aims to remove approximately 312 tons of plastic from our oceans to create playgrounds for new hockey fans while saving around 512 tons of CO₂ with each full-size rink.”





MEMBER NATIONAL ASSOCIATIONS



GROWING THE GAME FUND



STRATEGIC PLAN ICE26



IIHF SUSTAINABILITY

IIHF DEVELOPMENT

- HOCKEY FOUNDATION -

To think holistically and rapidly, act immediately and socially responsible and be sustainable.

To care about places where hockey is just at the very beginning. Almost or completely – No rinks, no players, no money, no heritage.



- HOCKEY TECHNOLOGIES -

To find & implement game-changing solutions to grow the hockey globally, with focus on performance and sustainability.

To implement all new modern and perspective products and ideas to revolutionize the existing hockey market around the World.



- HOCKEY MARKET VOLUME -

To instill the interest in more people around the World, through the construction of more modern energy-efficient skating rinks in every country in the World, using new and cheap technologies.

To provoke multi billion-dollar market for all hockey facilities and products, pushing the total addressable hockey market and new markets are not limited to active players.

Through Modern Technologies >>
Through Accessibility >>
Through Cheapness >>
Through the Growth of Interest to Hockey >>
To Conquest of Hockey on all continents Globaly

Each MNA and Country gets the **opportunity to build ice rinks at a very low cost**, anywhere in the city or territory, with low maintenance and make them **accessible to almost any category of the population**.

Growth a multi billion-dollar market for all hockey facilities and products with new and future technologies as well as **price and technologies rivalry on the market**.

Provoking by IIHF construction and use of new cheap and accessible hockey technologies, types of ice rinks and hockey equipment **in current MNA's and new countries around the World**.

Implementation by IIHF of new cheap hockey technologies, types of ice rinks and hockey equipment into **competition formats and systems for using by current and potential MNA's**.

GROWTH POINTS



WHAT WE HAVE TO DO

TODAY'S MATTERS

- IIHF & MNA's –

Support this opportunity for Worldwide Hockey Development and together initiate Updates & Authorization of the Synthetic Ice Rinks into the IIHF MPS & MCS

- IIHF FACILITIES COMMITTEE – & – IIHF SUSTAINABILITY COMMITTEE –

Study this Case, Market, Manufacturers, Potential, etc. and Develop Recommendations to IIHF

- IIHF DEVELOPMENT COMMITTEE –

Study this case and make additions of New Ideas & Solutions for the IIHF 2026 ICE Strategy

- EVENT & CHAMPIONSHIPS COMMITTEE –

Study the potential of Evolution 3 x 3 Hockey Events, Local & Regional MNA's Competitions and other Ice Hockey Events possibilities

***Together, We creating a future where hockey is
sustainable, accessible year-round, and
inclusive for all.***



***Together,
Let's hit
the ice!***